National Energy Board | Office national de l'énergie

Reasons for Decision

Sea Breeze Victoria Converter Corporation Application to Construct and Operate an International Power Line

EH-1-2006

September 2006

Facilities

Canada

2007-00305

National Energy Board

Reasons for Decision

In the Matter of

Sea Breeze Victoria Converter Corporation Application to Construct and Operate an International Power Line

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Abbreviations, Acronyms and Definitions

Act or NEB Act	National Energy Board Act
Agency	Canadian Environmental Assessment Agency
Applicant	Sea Breeze Victoria Converter Corporation
B.C.	British Columbia
BC Hydro	British Columbia Hydro and Power Authority
BCTC	British Columbia Transmission Corporation
Board	National Energy Board
BPA	Bonneville Power Administration
CEA Act	Canadian Environmental Assessment Act
CEC	Canadian Electrical Code
Certificate	Certificate of Public Convenience and Necessity
CNE	(BCTC) Commissioning Notice to Energize
CNO	(BCTC) Commissioning Notice to Operate
CRD	Capital Regional District
CSA	Canadian Standards Association
dBA	decibels (A weighting)
DFO	Department of Fisheries and Oceans
EC	Environment Canada
EIF	Energy Investors Fund
EMFs	electro-magnetic fields
FERC	(U.S.) Federal Energy Regulatory Commission
ha	hectare
HDD	horizontal directionally drilled
HVAC	High Voltage Alternating Current
HVDC	High Voltage Direct Current
IEC	International Electrotechnical Commission

IEEE	Institute of Electrical and Electronics Engineers
ILMB	(B.C.) Integrated Land Management Bureau
IPL	International Power Line; the 32 km Canadian portion of Sea Breeze's entire Juan de Fuca Cable project
ISO	International Organization for Standardization
JdFC Project	Juan de Fuca Cable Project; Sea Breeze's entire project including both the Canadian and the U.S. portions
km	kilometers
kV	kilovolts
m	meter
MF	magnetic field
MW	megawatt(s) (1,000 kilowatts; 1,000,000 Watts)
NEB	National Energy Board
NOPR	Notice of Proposed Rule Making
OATT	(BCTC) Open Access Transmission Tariff
PCC	(WECC) Planning Coordination Committee
Power Line	the 32 km Canadian portion of Sea Breeze's entire Juan de Fuca Cable project
Project	the 32 km Canadian portion of Sea Breeze's entire Juan de Fuca Cable project
RA	Responsible Authority under the CEA Act
RoW	Right of Way
Sea Breeze	Sea Breeze Victoria Converter Corporation
U.S.	United States
WECC	Western Electricity Coordinating Council

Recital and Appearances

IN THE MATTER OF the *National Energy Board Act* and the Regulations made thereunder;

IN THE MATTER OF an application by Sea Breeze Victoria Converter Corporation, dated 30 November 2005, for a Certificate of Public Convenience and Necessity under Sections 58.16 and 58.23 of the *National Energy Board Act* to allow the construction and operation of an international power line, filed with the National Energy Board under File No. OF-Fac-IPL-S191-01;

AND IN THE MATTER OF National Energy Board Hearing Order EH-1-2006, dated 18 January 2006;

HEARD in Esquimalt, British Columbia on 26, 27 and 28 June 2006;

BEFORE:

E. Quarshie	Presiding Member
D.W. Emes	Member
C.L. Dybwad	Member

APPEARANCES:

G. Nettleton	Sea Breeze Victoria Converter Corporation
C.W. Sanderson K. Hughes	British Columbia Hydro & Power Authority
S. Carpenter	British Columbia Transmission Corporation
A. Plasterer L. Acton	Goodwill Investments Ltd.
D. Williams	Moon Dancer Fishing Co. Ltd. RBS Seafood Harvesting Ltd. 628375 B.C. Ltd.
N. Pugh	Corporation of the Township of Esquimalt
E. McCusker	Town of View Royal
J. Saunders	National Energy Board

Chapter 1

Introduction

On 1 December 2005, Sea Breeze Victoria Converter Corporation (Sea Breeze or the Applicant) applied to the National Energy Board for a Certificate of Public Convenience and Necessity under Sections 58.16 and 58.23 of Part III.1 of the *National Energy Board Act* to allow the construction and operation of an international power line (IPL, Power Line or Project). As such, the provisions of section 58.27 of the Act would apply in respect of the proposed IPL, rather than the laws of the Province of British Columbia (B.C.).

The Board established a process to assess Sea Breeze's application and published Hearing Order EH-1-2006 on 18 January 2006.

Sea Breeze is proposing to construct an approximately 48 km long, ± 150 kV high voltage direct current (HVDC) merchant transmission line system, rated at 574 MW, between Vancouver Island and the Olympic Peninsula (Washington, U.S.). This project, known as the Juan de Fuca Cable (JdFC) Project, would connect the Port Angeles substation in Port Angeles, Washington to an existing BC Hydro and Power Authority (BC Hydro) substation in Greater Victoria, B.C.

The IPL, the Canadian portion of the JdFC Project, is approximately 32 km long, and includes both a terrestrial portion and a marine portion. The IPL would originate at BC Hydro's Pike Substation in the District of Highlands and follow an existing transmission line, railroad, and roads. The proposed terrestrial route in Canada would be installed underground for its approximately 12 km length. Horizontal directional drilling (HDD) would be used for the landfall, which would be located at Fleming Beach in the Township of Esquimalt. Approximately 19 km of the IPL would be submarine cable under the Strait of Juan de Fuca. Associated IPL facilities would include a converter station adjacent to the existing substation and approximately 500 m of overhead high voltage alternating current (HVAC) lines to connect to the electrical grid. A further 16 km of submarine cable and associated facilities would lie outside Canadian jurisdiction. Figures 1 and 2, adapted from maps in Sea Breeze's application, show the proposed location and route for the IPL. Further discussion of the preferred route is contained in Chapter 5 of these Reasons.

Sea Breeze submitted that, if constructed, the JdFC Project would be incorporated into the B.C. and Washington State electricity grids and operated by the respective independent system operators in each of these jurisdictions (i.e., the British Columbia Transmission Corporation [BCTC] and the Bonneville Power Authority [BPA]).

Sea Breeze also requested that the Board, as the Responsible Authority (RA) under the *Canadian Environmental Assessment Act* (CEA Act), complete an environmental screening report (ESR) and, after considering any comments filed, make a decision under subsection 20(1) of the CEA Act[1].

Sea Breeze published notices of the hearing in the Vancouver Sun, the Victoria Times-Colonist and the Saanich News on 28 January, 29 January and 27 January 2006 respectively. Notice was published in French in L'Express du Pacifique on 6 February 2006.

As well, a copy of Sea Breeze's application and all related documents forming the record in this proceeding were placed at Municipal Hall – View Royal, Municipal Hall – Esquimalt and Sea Breeze's office in Vancouver.

On 21 April 2006 Sea Breeze requested permission to file new evidence with respect to a proposed alternative route segment. Sea Breeze proposed adding segment 16 as an alternative to segment 14 and a portion of segment 15 (see Figure 2). As a result of approving this request, the Board determined that additional time was warranted for the Board and the other parties, as well as Federal and Responsible Authorities, to properly examine and assess this new evidence. Consequently, a new schedule and hearing date were set out.

Notice of the revised hearing date and venue was published in the Victoria Times-Colonist on 4 May 2006 and the Saanich News on 5 May 2006. Notice of the revised Hearing date and venue was published in French in La Source on 2 May 2006.

The Board held an oral public hearing to consider Sea Breeze's application for the IPL from 26 June 2006 to 28 June 2006 in Esquimalt, B.C.

As part of the proceeding, the Board prepared a set of proposed draft conditions that could be imposed in the event that the Board approved the IPL. During the oral portion of the hearing, the Board made these proposed draft conditions available to parties to allow them an opportunity to comment on any conditions which could be imposed if the IPL were to be approved or to suggest any additional conditions. The Board's consideration of parties' comments regarding the proposed draft conditions is incorporated in the following Chapters of these Reasons. Revised conditions that would be imposed should the IPL be approved are included in Appendix II.

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1 Information on CEAA may be obtained through the Canadian Environmental Assessment Agency website at www.ceaa-acee.gc.ca

Figure 1-1
General route of the Sea Breeze IPL Project within Canada

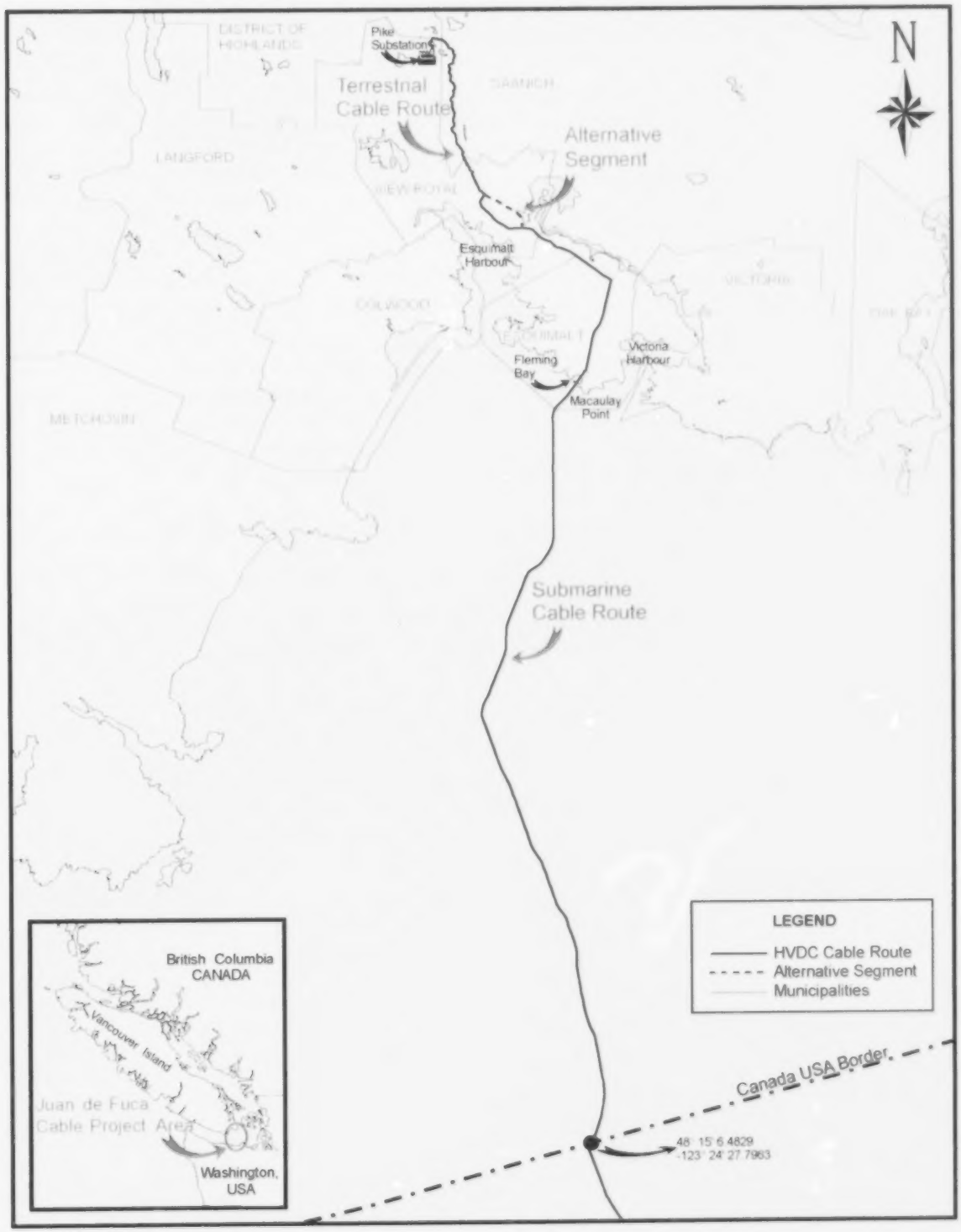
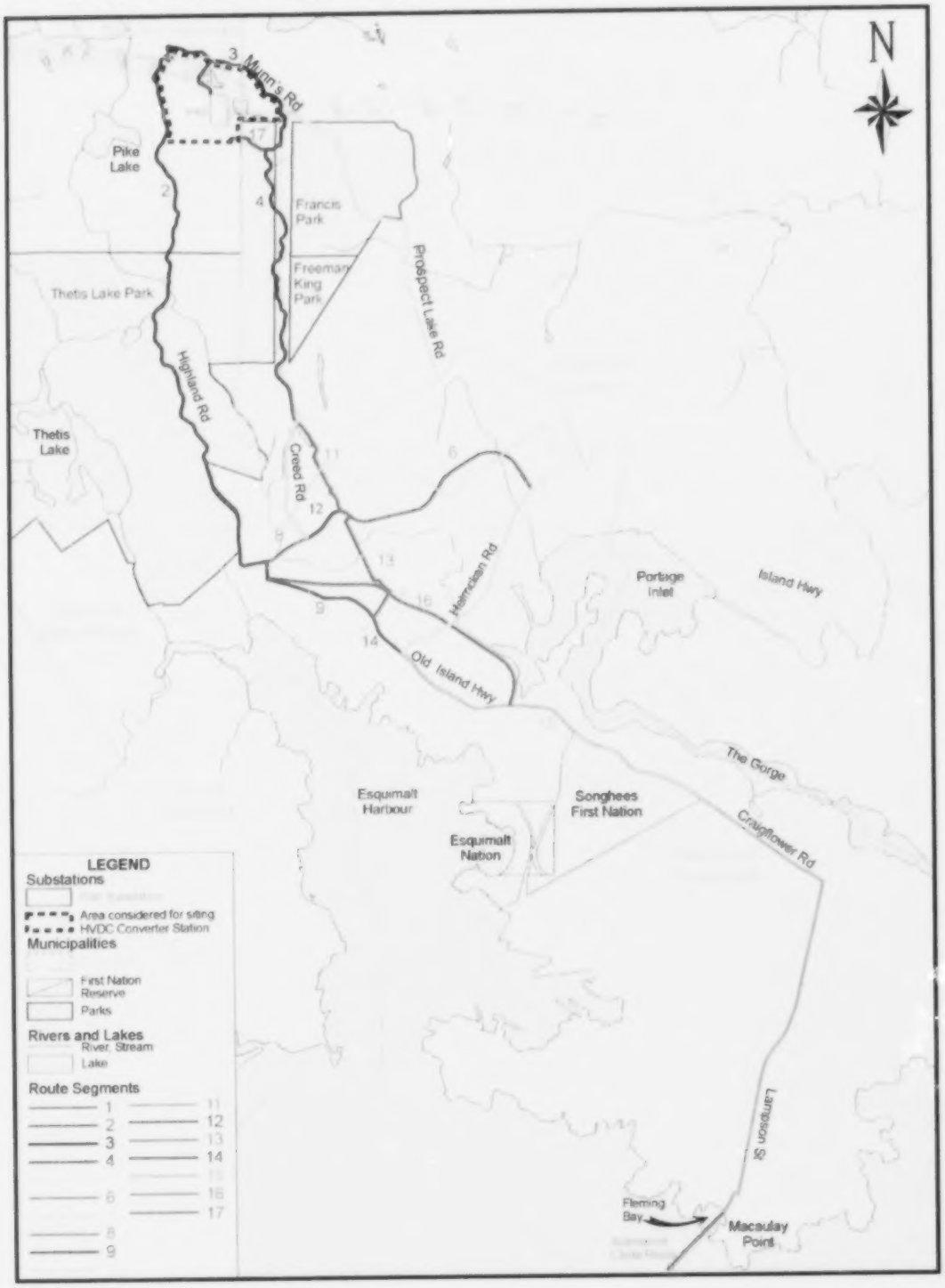


Figure 1-2
Potential route segment options for the Greater Victoria area.



Chapter 2

Need for the Facilities

2.1 Position of Sea Breeze

Sea Breeze indicated that the JdFC Project, of which the IPL forms the Canadian portion, would support increased transmission transfer capacity across the Canada/U.S. border by providing a new independently developed interconnection between the transmission systems administered by BCTC and the BPA. Sea Breeze stated that the JdFC Project would achieve the dual purpose of enhanced trade with wholesale markets in the U.S. and enhanced system reliability of Vancouver Island and the Olympic Peninsula.

2.1.1 Transmission Development in the United States

In its application, Sea Breeze noted that transmission investment in the U.S. has not kept pace with demand. Sea Breeze indicated that the Federal Energy Regulatory Commission (FERC) and other parties have acknowledged that new and innovative approaches to transmission investment are needed to meet critical infrastructure requirements. Further, on 17 November 2005, the FERC issued a Notice of Proposed Rule Making (NOPR) that expressed concern with the lagging investment in transmission infrastructure. Sea Breeze stated that the NOPR proposes transmission pricing reforms designed to promote needed investment and that the proposed rules would benefit energy customers by bolstering power-grid reliability and lowering costs for delivered power through reduced transmission congestion. The process is intended to provide further consideration of means and ways to facilitate transmission development, including merchant facility development.

Sea Breeze submitted that recent FERC decisions have recognized that new transmission capacity proposals, by entities willing to assume full financial risk for the investment, play a valuable role in expanding competitive generation alternatives for customers. On 15 September 2005, the FERC found that the JdFC Project was consistent with its policy and precedent with respect to promoting innovative solutions for transmission expansion, and granted Sea Breeze's affiliate the flexibility to sell transmission rights offered by the JdFC Project through a flexible and competitive process. This approval was subject to Sea Breeze's affiliate assuming the full financial risks of the JdFC Project's development and construction.

Sea Breeze stated that entrepreneurs and investors, such as the participants in the applied-for IPL, are capable of providing the resources required to address the under-investment in transmission infrastructure but that regulatory flexibility will be required to structure financial arrangements so as to attract private investment.

2.1.2 Transmission Development in Western Canada

In Sea Breeze's view, the Pacific Northwest and B.C. are in a nascent stage of electricity deregulation. The B.C. electricity grid is operated by BCTC in a manner that is intended to be independent of incumbent generation and transmission owners, as well as electricity marketers. In its application, Sea Breeze also referenced the B.C. provincial government's long-term energy strategy entitled *Energy for Our Future: A Plan for B.C.* (BC Energy Plan), introduced in November 2002. The BC Energy Plan states that independent power producers are expected to develop new generation, while BC Hydro will generally be restricted to improvements at existing plants.

2.1.3 Factors Influencing the Juan de Fuca Project's Objectives

As mentioned earlier, as part of the JdFC Project, the applied-for IPL objectives are enhanced trade with wholesale markets in the U.S. and enhanced system reliability for Vancouver Island and the Olympic Peninsula. The application listed several factors influencing these objectives.

First, Sea Breeze submitted that Western Canada relies significantly on the Blaine intertie, located between Blaine, Washington and the south-western tip of mainland B.C., for access to large wholesale power markets in the U.S., and that this is the most significant international intertie west of the Manitoba-Minnesota border.

Second, Sea Breeze contended that, absent new transmission solutions, Vancouver Island is exposed to system reliability and voltage stability concerns, resulting from lack of new generation projects on the Island, projected increase in demand, and aging existing transmission infrastructure.

Third, Sea Breeze stated that several jurisdictions that interconnect with the Pacific Northwest Region have undertaken significant policy initiatives towards promoting access to and use of environmentally-friendly sources of power, such as wind energy. Vancouver Island is a potential supply area for these projects but can only be developed if interconnection improvements to the grid are made.

Fourth, Sea Breeze pointed to Puget Sound Energy's recently-issued request for proposals to address its capacity need for 1600 MW by 2015. Sea Breeze stated that investment in new international transmission facilities is likely necessary for Canadian power generators to fully participate in these opportunities.

Fifth, Sea Breeze noted recent below-normal hydroelectric conditions in B.C. Sea Breeze suggested that when these conditions occur, imported power from the U.S. increases, causing congestion and curtailment on certain transmission facilities situated in the I-5 (interstate highway) corridor that runs between southwestern B.C. and Washington.

Sixth, Sea Breeze stated that BPA has had to develop and employ a curtailment protocol for its Puget Sound area customers to account for congestion encountered as a result of BPA's Columbia River Treaty obligation to return power to Canada.

In addition, Sea Breeze stated that the Olympic Peninsula is a weak power supply region due to a lack of strong transmission infrastructure and that, due to fiscal constraints, BPA has been unable to construct as many new East-West transmission lines as required to move power from the hydropower facilities in Eastern Washington to Western Washington. While noting that BPA has put much effort into increasing supply to the region, including a pilot demand management program to reduce peak demand, Sea Breeze suggested that BPA has indicated that, by December 2007, transmission lines may not be capable of bringing enough electricity to the area if a facility is out during peak periods of cold weather. Sea Breeze stated that BPA has projected a capacity deficiency in the area to occur under an N-1 reliability criterion[2] around 2008 to 2009. Sea Breeze asserted that the south end of the JdFC Project, which would interconnect to the Olympic Peninsula, could provide support to the system under contingency situations.

2.1.4 Project Benefits

Based on the above, Sea Breeze suggested that the JdFC Project could be expected to provide the following significant benefits:

- increase inter-regional import/export limits and thus provide more competition options to the marketplace;
- allow markets on both sides of the international border to have efficient economic access to existing and new generation sources (such as wind farms);
- improve regional electric reliability for both Vancouver Island and the Olympic Peninsula; and
- promote the optimal allocation of generation resources.

More specifically, Sea Breeze indicated that the additional electrical transfer capacity would allow for greater arbitrage capability. Sea Breeze noted that the arbitrage activities of Powerex, the largest volume importer and exporter of electricity in Western Canada and the Pacific Northwest, can facilitate low electricity prices for the ratepayers in B.C.

Sea Breeze also indicated that the JdFC Project is expected to enhance electricity trade opportunities for other market participants, including power producers and marketers situated in western Canada and the U.S. These benefits arise not only from the additional capacity provided by the JdFC Project but from the configuration of the JdFC Project as a parallel path to the I-5 corridor.

Sea Breeze stated that the I-5 corridor is particularly important for the return of electricity, known as the Canadian Entitlement, to B.C. as part of the Downstream Benefits of the Columbia River Treaty. It also suggested that BC Hydro's call on Downstream Benefits to return power along the I-5 corridor causes curtailment to load customers in the region.

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2 N-1 reliability means that the transmission system can still operate with 1 transmission element out of service. N-2 reliability means that the transmission system can still operate with 2 transmission elements out of service. N-1 is a standard criteria used by most electrical systems to account for any elements taken out of service for maintenance or a failure of an element. N-2 is an extreme situation where 2 elements are out of service and is typically avoided by utilities to prevent overstressing the system.

In addition, Sea Breeze stated that interconnection studies with the BCTC and BPA systems performed thus far tend to confirm the potential for the JdFC Project to be the trigger for a parallel B.C.-U.S. interconnection that could extend all the way to California. Coupled with other infrastructure projects, Sea Breeze indicated that a new transmission corridor to California could be formed, allowing California to take advantage of the large potential for renewable energy in B.C. and the U.S. Northwest.

With respect to system reliability, Sea Breeze suggested that the JdFC Project would provide enhanced reliability for Vancouver Island and the Olympic Peninsula while also allowing for significant deferral of transmission capital investment by BCTC and BPA. Sea Breeze submitted that the JdFC Project may defer or eliminate the need for BCTC to replace existing de-rated HVDC circuits to Vancouver Island and the need for BPA to construct an 84-mile, 230 kV line to serve load on the Olympic Peninsula. Further, Sea Breeze submitted that the JdFC Project, including associated enhancement to the Olympic Peninsula transmission system, would bring N-2 reliability to the largest load pocket in BPA not currently meeting that standard, and provide dynamic voltage support and transient stability that could increase flow gate capabilities along the I-5 corridor.

Sea Breeze also highlighted benefits of the applied-for Project's use of HVDC Light® cable. In Sea Breeze's view, this technology will provide operational flexibility and black-start capability; controllability that enhances security and protection against cascading outages; and programmable capabilities, fostering fast and effective controls over the reactive voltage entering into the substations at Victoria and Port Angeles.

2.2 Position of Parties

In a letter of comment, BPA stated that Sea Breeze's assertion that BPA's transmission system is unable to meet load obligations on the Olympic Peninsula is inaccurate. BPA noted that several years ago it established a Regional Non-Wires Round Table to aid in identifying potential transmission improvement projects with non-wire construction alternatives and that the Round Table identified the Olympic Peninsula as an area where these non-wire initiatives could be successful. With respect to Sea Breeze's assertion that BPA is trying to increase supply into the area through demand reduction programs because the transmission lines may not be sufficient to carry peak load at all times, BPA submitted that this mischaracterizes the nature of the Non-Wires Solutions program. BPA clarified that this program seeks to provide an additional alternative, which balances engineering, economic and environmental aspects, to any construction project.

BPA also refuted Sea Breeze's assertion that BPA was unable to construct due to fiscal constraints as many new East-West transmission lines as required. As evidence, BPA cited its September 2003 installation of capacitors to strengthen East-West transmission and added that no new transmission lines are needed at this time in the Puget Sound area.

In BPA's view, existing transmission congestion in the Puget Sound area is not a result of the return of power to Canada under the Columbia River Treaty. Further, BPA stated its curtailment protocol for the Puget Sound area is an effort to manage the many factors contributing to curtailment conditions that occur on an infrequent, sporadic basis.

BPA also contended that Sea Breeze's assertion that BC Hydro's call on Downstream Benefits to return power northwards along the I-5 corridor causes curtailment to load customers in this region is incorrect. BPA noted that approximately 21 percent of the Canadian Entitlement power is delivered to areas not along this corridor.

BPA highlighted that the 1999 Entity Agreement requires very specific points of delivery for the return of Canadian Entitlement to Canada and that Sea Breeze's proposed transmission path will not allow delivery to these specified, required points of delivery. In BPA's view, it would be very difficult, if not impossible, to change these points of delivery such that the proposed transmission path could be used as an alternative path for Canadian Entitlement return. BPA also contended that the U.S. and Canadian governments would likely be required to reopen extensive negotiations for any change to the point of delivery for Canadian Entitlement specified in the 1999 Entity Agreement.

Finally, BPA stated that to accommodate a transmission request from the Sea Breeze point of receipt would require nearly doubling its existing infrastructure to provide transfer to and from the interconnection.

BCTC stated that its concerns related to the potential impacts of the JdFC Project on its transmission system and on its customers. While indicating that it is not opposed to merchant transmission nor the applied-for Project, if supported by the market, BCTC disputed that the need for the Project has been demonstrated at this time, noting that no contracts have been put forward in support of the application.

2.3 Response of Sea Breeze

With respect to BPA's comments, Sea Breeze indicated that in its view, BPA was not objecting to the concepts Sea Breeze was presenting, just the words that Sea Breeze used. Although BPA indicates that there are many conditions that resulted in over-booking and not just the return of the Canadian Entitlement, Sea Breeze stated that from a utility perspective the Downstream Benefits are an additional layer on the utility's native load. To Sea Breeze, it is this last layer that causes the problem. In any event, Sea Breeze maintained that the theory behind why it is congested is irrelevant, what matters is that the intertie is congested and that there is a need for additional facilities.

In response to BCTC's concerns, Sea Breeze indicated that electricity deregulation is in its infancy and that the Board's determinations should be based on the facts and circumstances that exist in the evidence before it. Sea Breeze also noted that, unlike a utility that can include development costs in its rate base, the investors in the JdFC Project are at risk for any costs incurred. Sea Breeze suggested that it was proceeding through applicable regulatory approval processes and obtaining approvals in order to facilitate market and commercial outcomes.

Views of the Board

As noted by Sea Breeze, this application concerns the first international merchant transmission line to come before the Board for certification. As a merchant line, its owners are at risk for any funds devoted towards its

development, construction and operation. Economic and financial risks associated with the Project cannot be passed along to utility customers but must be borne by investors.

In making its determination as to whether to issue a Certificate, the Act requires that the Board shall have regard to all considerations that appear to it to be relevant. In this new situation, the Board must ask itself whether an *a priori* determination of the need for the Project is a relevant consideration, given that if the market does not support the Project, it is unlikely to be built. In addition, if an *a priori* determination of need is relevant, is the test with respect to the demonstration of need for the Project the same in these circumstances as the test when the risks associated with a project can be passed along to utility customers? More specifically, should this Applicant be required to have contracts for the use of the Project it wishes to develop prior to regulatory approvals being issued?

In the Board's view, an *a priori* determination of need is a relevant consideration. In coming to this view, the Board notes that not all costs associated with this Project are financial or economic ones to be borne by the investors in the Project. For example, construction of this Project is likely to result in some level of environmental impact and may impose inconveniences on other people. In order to determine whether the issuance of a Certificate is in the public interest, some assessment of the need for this Project should be undertaken so that it can be balanced against these other burdens.

However, the Board is not persuaded that signed contracts for the use of this Project are required in these particular circumstances. Since the financial risks associated with this Project's development are borne by the investors, the Board is of the view that an assessment of the extent to which this Project is likely to address market need is sufficient in these circumstances to allow the Board to undertake its regulatory function.

Therefore, the Board is of the view that Sea Breeze has demonstrated that the JdFC Project has the potential to respond to market need. In particular, the Board accepts Sea Breeze's evidence with respect to the potential ability of the Project to support increased transmission transfer capacity across the Canada/U.S. border.

With respect to BPA's comments, regardless of the reasons why or how congestion has occurred or the terminology used to express this, no party appears to contradict Sea Breeze's assertion that there is congestion on the intertie in the Pacific Northwest. Though the IPL may not be able to be used to return the Canadian Entitlement, the Board is of the view that the IPL could nonetheless help ease the congestion by providing an additional transmission path between B.C. and the U.S.

Chapter 3

Project Financing

3.1 Position of Sea Breeze

In the application, Sea Breeze stated that it intends to arrange financing for the JdFC Project following the receipt of all major regulatory approvals and is confident there will be no major difficulties in obtaining the capital financing. The proposed capitalization of the Project will include both equity and debt financing. Sea Breeze intends to finance the Project with two parties, namely Energy Investors Fund (EIF) and Société Générale.

Sea Breeze noted that EIF is global in scope, participates in energy project financing, and is an investor in private power projects and companies. EIF was the lead equity financing participant in two recent U.S. non-utility transmission projects: the Neptune RTS Project, and the Path 15 Upgrade in California.

Sea Breeze noted that Société Générale is an international investment bank. It has broad experience in raising debt and equity capital for both energy and public/private infrastructure projects. Société Générale also has expertise in designing and conducting open seasons for the sale of transmission capacity on merchant transmission facilities. Sea Breeze stated that Société Générale participated in the following recent Canadian and U.S. infrastructure projects: the Neptune RTS project; the Vancouver Airport Rapid Transit Project; and the Sea to Sky Highway associated with the 2010 Vancouver Winter Olympics.

Sea Breeze indicated that EIF will provide the equity capital and Société Générale will arrange the debt capital for the financing of the applied-for IPL and that 100 percent of the financing will be secured prior to the commencement of the IPL's construction. Sea Breeze also stated that it has secured funding with EIF for approximately three percent of projected construction costs to carry the JdFC Project through the process of obtaining U.S. and Canadian permits, regulatory licenses, and capacity negotiation/contracting. Further, Sea Breeze noted that it intends to carry a performance bond in case the Project does not move forward and restoration of the right of way (RoW) is required, so that the funds to carry out this restoration will be available. Sea Breeze submitted that such circumstances are not expected given its intent to only move forward with construction once full funding for the Project is secured.

3.2 Position of Parties

BCTC noted Sea Breeze's acknowledgment that the ownership of the shell company that is applying for the Certificate is going to change and that the ultimate owner of the shell company is unknown at this time. It also elicited evidence from Sea Breeze that the financing parties, such as EIF as the equity partner, may change, as it had in similar projects, for example, the Neptune Project. As the ultimate owner is not known at this time, BCTC argued that the Board is unable to determine if the entity is responsible and experienced and whether it is financially capable to

construct and operate the facilities. Therefore, BCTC recommended that a condition be added so that the ultimate ownership of the applied-for facilities is subject to review by the Board prior to the start of construction.

3.3 Response of Sea Breeze

Sea Breeze opposed BCTC's condition regarding ownership, stating that it is not the Board's practice to look behind the certificate holder to see how its affairs are arranged. Sea Breeze further noted the Board's audit powers and that the Board has the mandate to ensure public safety. In addition, Sea Breeze noted the difficulty in determining what the term "ultimate ownership" means.

Views of the Board

The Board is of the view that the arrangements Sea Breeze has made for financing, as outlined in the application and its related submissions, are sufficient for the IPL. The Board notes Sea Breeze's commitment to have 100 percent of the IPL's financing in place prior to commencing construction and that Sea Breeze has ensured funds will be available for restoration if the Project is not completed after construction has commenced.

The Board notes that any Certificate issued to construct and operate the IPL would be to Sea Breeze. Further, the Board would condition the Certificate to ensure that the IPL would be owned and operated by Sea Breeze (condition 1, Appendix II). Accordingly, if Sea Breeze chooses to sell the IPL's physical facilities to another entity, an application to the Board and an amendment to the Certificate would be required (condition 2).

The Board is cognizant that the ultimate owner of the applied-for facilities, that is, the ownership of Sea Breeze, could change in the future, as is the case with many other NEB-regulated facilities. The Board would impose a number of conditions upon the Certificate holder, compliance with which would ensure that the IPL would be constructed and operated in a manner that is safe and protects the environment, regardless of who owns the shares of the certificated company. In addition, oversight of the IPL would be maintained by the Board throughout the life of the IPL. For all of the above reasons, the Board is of the view that BCTC's recommended condition with respect to review of the ultimate ownership of Sea Breeze is not necessary in this circumstance.

Chapter 4

Engineering Design and Installation

4.1 Overall Design

As discussed in Chapter 1 of these Reasons, Sea Breeze is proposing to construct a ± 150 kV HVDC system, rated at 574 MW, that would provide an additional north-south interconnect between BCTC's transmission system and BPA's transmission system in Washington State. The JdFC Project would run between the Pike Substation in Greater Victoria, B.C., and the Port Angeles Substation in Port Angeles on the Olympic Peninsula in Washington, U.S.

The IPL, that is, the Canadian portion of the JdFC Project, would entail approximately 12 km of terrestrial buried cable and 19 km of marine installed cable. It would consist of two conductors installed in a single trench. HVDC Light® cables would be used, which Sea Breeze submitted have less aging and a longer lifetime than AC cables. Sea Breeze noted that the major difference between the marine and terrestrial cables is the size of the core conductor and the materials used in the outer covering. Marine cables have a higher tensile strength to withstand greater stresses during installation.

An HDD bore through bedrock would be used for the landfall transition between the marine and terrestrial portions of the Project. The proposed landfall location is a public boat launch site at Fleming Beach in Esquimalt.

At the Pike substation, a converter station and overhead AC cables would be required to complete the interconnection between the proposed HVDC Light® IPL and the existing HVAC systems. Sea Breeze submitted that the AC cables would consist of three-phase overhead lines strung on two towers and would be approximately 500 m in length. The exact specifications would be determined during the detailed engineering design for the Project.

4.2 Design and Installation Standards

4.2.1 Position of Sea Breeze

Sea Breeze stated that the Power Line would be designed using HVDC Light® technology, engineered and supplied by ABB Inc. (ABB), and specifically designed for direct burial.

Sea Breeze indicated that HVDC technology is relatively new to North America with few installations in place. As a result there are no established Canadian Standards Association (CSA), Canadian Electrical Code (CEC), or other Canadian standards related to the design and installation of ±150kV HVDC cables.

Sea Breeze submitted that, in general, the underground cable installation would follow CSA Standard C22.3 No. 7-94 (revised 2005), though it acknowledged that this standard specifies the requirements for buried distribution systems with working voltages of less than 150 kV phase to

phase, and is not intended for transmission cables. Nonetheless, Sea Breeze outlined a number of minimum burial depths that CSA Standard C22.3 specifies and Sea Breeze committed to meet or exceed these requirements.

To ensure additional protective measures are implemented to protect the reliability of the proposed transmission cables, Sea Breeze committed to adopt a number of supplementary measures, including minimum distances and clearances between the IPL and other utilities, conducting soil thermal resistivity analyses for determining minimum separations, and using mechanical protection where needed. Sea Breeze committed to consulting with appropriate municipal agencies and other utilities during detailed Project design and incorporating their requirements for existing facilities and utilities into its design.

Sea Breeze has forwarded the Institute of Electrical and Electronics Engineers (IEEE) Standard 1120-2004 to ABB for review, has considered CSA Standard C22.3 No. 7-94 R2005, and has highlighted that the installation work will need to comply with municipal bylaws and/or the Provincial Master Municipal Construction Document and municipal standards. Sea Breeze also noted that ABB, as partner and as the installer of the IPL, requires that all works connected with the supply of the HVDC Light® Link system be in accordance with the requirements of the appropriate International Electrotechnical Commission (IEC) or International Organization for Standardization (ISO) standards, or if none exists, with recognized standards and design practices.

Sea Breeze further committed to providing to the Board for review, the standards that are selected with ABB for marine cable installation, and the rationale for that selection. Likewise, Sea Breeze will contact the BC Safety Authority regarding specific standards for design and has committed to reporting to and filing appropriate documents with the Board, in advance of the plans, profiles and books of reference, with respect to the design and installation of the IPL.

4.2.2 Position of Parties

No parties submitted evidence with respect to the overall standards, or lack thereof, to be applied over the whole IPL. Certain intervenors did raise site-specific, or system-specific concerns, for example, concerns related to the terrestrial portion of the IPL. These concerns are discussed further in subsequent sections of this Chapter.

Views of the Board

The Board is of the view that using leading edge HVDC Light® technology for the IPL cables is acceptable, assuming the IPL is constructed with at least the minimum commitments set out in the application. However, the Board notes the lack of clearly established, recognized regulatory standards for the Project. Therefore, in order to ensure the IPL is designed, constructed and operated in a safe and reasonable manner that poses minimal risk to the public, the Board agrees it would be prudent for Sea Breeze to consult with the BC Safety Authority and any other relevant regulatory bodies with respect to the IPL's design and installation. Accordingly, the Board would condition

any Certificate to require Sea Breeze to provide confirmation that the design and installation standards to be implemented have received all necessary approvals from the appropriate regulatory bodies having jurisdiction (conditions 16 and 17). As part of fulfilling this condition, the Board would expect Sea Breeze to describe its methodology for identifying all the relevant regulatory bodies. Further, the Board would expect Sea Breeze to fulfill its commitments to consult with the appropriate municipalities, utilities and other bodies regarding the design and installation of the Project and to provide the selected standards to the Board in advance of the plans, profiles and books of reference being filed.

Given the conditions proposed by the Board, and the commitments made by Sea Breeze, the Board is satisfied that the IPL would be designed and installed in an appropriate manner.

Since, if approved, this would be the first merchant buried HVDC installation in Canada, the Board is of the view that the specifications and standards that would be used on this Project might be used as a model for future HVDC projects in Canada. Consequently, the Board would expect Sea Breeze to ensure that appropriate standards are selected and implemented on the Project, and that Sea Breeze maintain a high level of diligence throughout its construction and operation of the IPL, with its attendant fulfillment of the Board's conditions.

4.3 Terrestrial Design, Installation and Infrastructure Crossings

4.3.1 Position of Sea Breeze

Sea Breeze's application indicates that the 12 km terrestrial portion of the IPL would be buried primarily within a designated RoW, under existing road, railroad and utility RoWs. Underground cable installation requires equipment such as excavators, backhoes, mechanical trenchers, tandem trucks and compaction equipment. Sea Breeze stated that, typically a restoration crew would follow the main excavation and full asphalt restoration would be done at a later time.

Sea Breeze filed a number of typical trench profiles with associated bedding, backfill, and asphalt restoration. It indicated that the specific trench profile employed will depend on the existing and anticipated infrastructure development along the route. Sea Breeze noted that once potential routes had been identified, it began consultation with the municipal engineers in the affected municipalities to determine the feasibility of those potential routes and to discuss the technical aspects of construction, as well as assess the types of existing utilities along the proposed route.

4.3.2 Position of Parties

Although Sea Breeze proposed using CSA standard C22.3 with supplemental measures, the Corporation of the Township of Esquimalt (Esquimalt) expressed concerns that the IPL be

designed and installed to provide adequate protection from damage, and to ensure appropriate separation from other underground utilities and services for safety reasons. Esquimalt also raised concerns about effects on the environment and socio-economic effects of the construction and operation of the IPL, such as traffic control, noise and pavement restoration. These concerns are discussed further in the Board's ESR and in Chapter 7 of these Reasons.

However, Esquimalt also indicated that, while the draft environmental protection plan (EPP) submitted by Sea Breeze during the course of the proceeding did not resolve the concerns raised by Esquimalt, it was anticipated that the detailed alignment would ultimately ensure that the concerns expressed would be considered and mitigated.

4.3.3 Response of Sea Breeze

As noted in the previous section, in response to concerns raised, Sea Breeze has committed to consult with the appropriate municipalities, utilities and other bodies, including the BC Safety Authority, regarding the design and installation of the Project during the detailed design phase of the Project. Sea Breeze stated that it remained confident that the issues raised can be resolved through the negotiation of applicable commercial agreements and by working collaboratively with the municipalities to develop mutually acceptable plans and designs with respect to existing utilities.

Views of the Board

One of the goals of the Board[3] is to ensure that facilities are constructed and operated in a manner that does not pose a hazard to the general public, and that utilities and municipalities working in the vicinity of a transmission line can do so safely. The Board is aware that there are inherent dangers when working or excavating near buried high voltage cables. In order to avoid any potential damage to the cable or other utilities or infrastructure and to ensure sufficient clearance between these, the Board would condition any Certificate to require that, prior to construction, Sea Breeze identify all infrastructure facilities to be crossed and confirm that it has permits or agreements for all the crossings (condition 21).

The Board notes Esquimalt and Sea Breeze's evidence that the outstanding concerns could be considered and mitigated during the detailed design phase of the Project, during commercial negotiations, or as a result of consultation prior to selecting design and installation standards.

The Board would also require that as-built drawings be filed with the Board (condition 35) and that these identify the location of all adjacent infrastructure facilities. The Board would expect Sea Breeze to make these as-built drawings available to the municipalities through which the

3 The NEB's Strategic Plan identifies five goals that the NEB strives to achieve. Among these is that "NEB-regulated facilities and activities are safe and secure, and are perceived to be so."

IPL passes, to the government departments within whose jurisdiction the IPL falls and, upon request, to any other persons requiring detailed information on the location of the IPL.

4.4 Marine Cable Installation

4.4.1 Position of Sea Breeze

Sea Breeze submitted that the Project's 19 km long marine route was selected to minimize the overall distance while avoiding, to the greatest extent possible, areas with very hard soil or very soft deep soils, exposed bedrock, rocks, cobbles, and boulders, undulating or steep seabed terrain, active bedforms such as large sand waves, and areas with numerous other cable crossings. Sea Breeze has undertaken a marine geophysical and bathymetric survey to support the route selection.

Sea Breeze submitted that to protect the submarine cable from third party damage it intends to bury the cable, except in areas of exposed bedrock, very dense soils or other submerged cable crossings. Sea Breeze noted that it is not an operational requirement for the cable to be buried. However, for reliability and other financial reasons, Sea Breeze has an incentive to ensure that the cable would be buried or protected when it is installed and that it remains buried or protected. Sea Breeze indicated that there are at least nine different methods of digging a trench and burying the marine cable. The method used would be determined by site-specific conditions after detailed core penetration analysis and ground truthing have been completed. However, Sea Breeze also indicated that it would expect to use either a ship-towed sea plow or Remotely Operated Vessel jetting tool for trenching.

Where the marine cable cannot be buried and where problems with an exposed cable are deemed possible, the cable may be covered with concrete mats or blankets to protect it from damage, or other appropriate measures would be implemented. The marine geophysical and bathymetric survey indicates that bedform materials may be highly mobile in some areas and a combination of thin sediment cover, high bottom currents or scour depressions could result in uncovering or short cable free-spanning conditions. However, free-spanning conditions within the study area are not expected to result in damage to the marine cable due to the strength of the cable, installation methods and slack built into the system. The weight of the cable, 75 kg per meter, will also help the IPL remain buried or on the sea floor.

The proposed marine design and installation practices are based mainly on ABB and European IEC standards. Sea Breeze indicated that it has passed on the IEEE standard 1120 – 2004 pertaining to submarine construction and CSA Standard C22.3 No. 7-94 R2005 to ABB for review. Sea Breeze also committed to filing with the Board the design and installation standards that would be used for the marine portion of the installation in advance of filing the plans, profiles and books of reference.

Sea Breeze has committed to undertake a marine monitoring program, in part to confirm the extent to which the marine cable remains buried and to develop mitigation measures to keep the cable buried to the extent practical. The marine monitoring program would be developed in consultation with DFO and, if possible, with commercial fishers' representatives.

4.4.2 Position of Parties

Intervenors involved in commercial fishing near and within the proposed IPL marine route raised a number of concerns related to the marine portion of the IPL. Those concerns related to the environmental and socio-economic effects of the marine portion of the IPL are discussed in Chapter 7 of these Reasons and in the ESR. The one concern related to engineering has to do with the burial of the IPL and the risk of it becoming unburied over time, due to movement of sand waves, sediment and currents in the area.

4.4.3 Response of Sea Breeze

In response to these concerns, as noted above, Sea Breeze has committed to preparing a marine monitoring plan. In addition, Sea Breeze committed to providing information to the commercial fishers regarding the location of the cable so that grappling over top of the cable may be minimized. One of the suggested methods was to provide the commercial fishers with as-built surveys in a format compatible with navigational software. Sea Breeze has also committed to developing an unrecoverable fish equipment plan.

Views of the Board

Given the lack of any applicable Canadian standards for the marine installation of the cable, the Board notes Sea Breeze's commitments to work with DFO and the commercial fishers, to undertake additional testing and analyses, and to submit its final design and installation standards to the Board for review. Consequently, the Board is persuaded that the marine portion of the IPL will be designed and installed in a safe and appropriate manner.

The Board takes note of the particularly helpful and credible evidence of the experts from ABB, Mr. Lindhe and Mr. Bahrman, regarding their experience with typical engineering and installation practices for this type of cable in marine conditions.

With respect to the burial of the marine portion of the IPL, while not an operational requirement of the cable, the Board is of the view that it is in Sea Breeze's best interest that the marine portion of the IPL be buried to the extent possible and remain buried to the greatest extent practical. Consequently, the Board is persuaded that Sea Breeze and ABB will ensure that the marine cable is installed in a manner that limits cable exposure or is adequately protected in areas where burial is not possible or practical. The Board notes that Sea Breeze has not established at this time any criteria for when armouring or reburial of the cable would be required; however, the Board would expect this information to be included within the Marine Monitoring Plan to be submitted to the Board as part of Sea Breeze's filing of pre-construction reports and environmental protection plan (EPP) (conditions 12 and 15).

The consequences of any potential uncovering of the cable is an area of concern for the Board since it could expose the cable to damage, or result in fishing gear entanglement. The Board acknowledges that other parties have concerns that exposure of portions of the marine cable may have impacts beyond damage to the IPL, and have suggested conditions to alleviate these concerns, further discussed in Chapter 7 and in the ESR. For these reasons, while the Board is generally satisfied with Sea Breeze's evidence that the cable would remain buried and with Sea Breeze's related commitments, and is not persuaded that the commercial fishers' suggested conditions are necessary (as discussed in Chapter 7 and the ESR), the Board would nonetheless condition any Certificate to require Sea Breeze to prepare and file with the Board the Marine Monitoring Plan and Unrecoverable (Fishing) Equipment Mitigation Plan, discussed above (conditions 12 and 19).

4.5 Horizontal Directional Drill

4.5.1 Position of Sea Breeze

Sea Breeze identified Fleming Beach as its preferred landfall site and proposed installing the buried cable within a directionally drilled bore. Sea Breeze has undertaken an HDD feasibility study and determined that the landfall installation using HDD is achievable. The HDD installation is the preferred installation method as the Fleming Beach site is believed to be underlain by high strength Granodiorite bedrock and HDD methods mitigate against trenching through the foreshore environment. Sea Breeze submitted a Geological Assessment of the Project in which the subsurface geology at the landfall site was identified using published geologic maps and examination of terrestrial outcrops in the vicinity of Fleming Beach. Sea Breeze stated that forward reaming of the HDD bore would be undertaken to minimize drilling fluid release into the aquatic environment.

The HDD feasibility report indicates that due to the high strength of the bedrock material, the drilling progress will be slow, requiring five to seven weeks to complete the approximately 700 m drill and installation. Pilot hole drilling and forward reaming through the bedrock substrate is estimated to require a rig capable of 200,000-250,000 pounds of force. Sea Breeze states that the HDD entry site would be located within the parking lot of the Fleming Beach boat launch. The Feasibility Report identifies that there are residents within 20-40 m of the HDD site and recommends employing sound abatement measures and limiting drilling operations to a period between 7:00 am and 7:00 pm to be compliant with local noise bylaws.

Sea Breeze committed to perform a hazard assessment in advance of the HDD operation and to ensure that contingency plans to deal with consequences identified in the hazard assessment would be developed and complied with by the HDD Contractor. Additionally, Sea Breeze has committed to undertake a noise assessment and developing a noise control plan for the HDD operation.

4.5.2 Position of Parties

No engineering concerns have been expressed about the HDD landfall operation by other parties. However, concerns regarding noise and access to the boat launch at the HDD landfall site have been expressed, particularly with respect to the length of time the HDD operation could last. In addition, several people raised the issue of the potential impediment to accessing Fleming Beach for recreational purposes, as a result of both the noise and the extent of space required for the HDD operation. These concerns are discussed further in the ESR and Chapter 7.

Views of the Board

The Board is of the view that Sea Breeze has established that an HDD installation of the IPL landfall is both feasible and advantageous. However, Sea Breeze has not yet performed a subsurface investigation at the HDD site and did not indicate whether subsurface conditions that could impact the success of the HDD, such as rock competency (e.g., fracture, weather state, strength), structure and texture (e.g., faulting, problematic inclusions, other secondary plains of weakness), were included in the landfall design. The Board would expect that further investigations would be completed as necessary to support the HDD planning and final design process, and that these investigations would inform the hazard assessment and the contingency plans discussed below.

While Sea Breeze has not comprehensively addressed hazards or other factors that could impact the success of the HDD landfall, such as loss of fluid circulation and containment; changes in subsurface conditions from the assumed properties; misalignment of drill hole from design drill path; failed bore or pullback; delays in drill schedule; lack of HDD contractors capable of the undertaking; land-owner complaints (noise, air quality, ground vibration, access); and Traffic Control/Public Safety, it has committed to performing a hazard assessment in advance of the HDD operation and to ensuring that contingency plans are developed. The Board expects that this hazard assessment and the contingency plans would address, among other things, these issues.

The Board also notes Sea Breeze's commitments with respect to assessing noise and developing a noise control plan, as further discussed in the ESR.

Accordingly, the Board is satisfied that, taking into account the commitment to develop and implement the above-noted plans, Sea Breeze has demonstrated the capability to complete the HDD landfall cable installation with minimal adverse engineering impacts. The Board would condition any Certificate issued to ensure Sea Breeze develops the hazard assessment and contingency plan to be implemented (condition 10), as well as undertakes a noise assessment (condition 11) and develops a noise control plan for the HDD landfall operation (condition 26).

4.6 System Impacts

4.6.1 Position of Sea Breeze

With respect to the impact the IPL may have on the existing transmission systems as a whole, Sea Breeze committed to providing the Western Electricity Coordinating Council (WECC) Phase 2 Rating Report prior to the construction of the IPL. The WECC study will model the impact the Project would have on the existing transmission systems and reveal any negative impacts that would require mitigation should the Project be implemented. The impact on the existing maximum and design transfer capabilities of the existing 500 kV tie line to Alberta will also be studied as part of the WECC study, as Phase 2 is the appropriate phase in which adverse impacts are discussed and mitigation plans established. The WECC study would be made publicly available.

Sea Breeze expects that due to the technical characteristics of the HVDC Light® technology, there will be numerous positive effects from the JdFC Project that will benefit the WECC System. Sea Breeze confirmed that it intends for the JdFC line to be operated within the WECC Accepted Rating and Operating Transfer Capability limits. An Accepted Rating occurs when there is acceptance of the Phase 2 Rating Report. Acceptance is deemed to occur when either (i) there are no outstanding review comments to be resolved, or (ii) the WECC dispute resolution process has been completed to resolve the outstanding issues. In the event that the outstanding issues have not been resolved using these processes, the Planning Coordination Committee (PCC) chairman will determine whether PCC members are satisfied that the Project has met all requirements for Phase 3 (which includes construction) of the rating process. Any network improvements to provide the full rating capacity of the JdFC line during summer and winter must be included in the WECC Project Rating Review.

Sea Breeze has also commissioned and received from BCTC the results of a feasibility study conducted by ABB. The feasibility study found that it was possible to import and export from the BCTC system over the JdFC system certain amounts of power. Any network upgrades that may be required to the B.C. system will be identified during the System Impact and Facilities study to be completed by BCTC, and Sea Breeze has committed to forwarding a copy of the terms of reference for the study to the Board once it is finalized. Sea Breeze indicated that it would be responsible for paying for any modifications necessary to meet BCTC interconnection standards.

Though the operator of the IPL has yet to be identified, Sea Breeze anticipates that BCTC, at a minimum, will have operational dispatch responsibility consistent with the provisions of its Open Access Transmission Tariff (OATT).

Sea Breeze also noted that after construction is completed, BCTC would be required to issue a Commissioning Notice to Energize (CNE) and a Commissioning Notice to Operate (CNO). Both of these require sign off from ABB, Sea Breeze, BCTC and BPA.

4.6.2 Position of Parties

BCTC is the operator of the existing transmission system in B.C., with which Sea Breeze's IPL would be connected and while it did not submit evidence in this proceeding, it did question Sea Breeze through IRs and at the oral portion of the hearing. As a result of the responses to its questions on Sea Breeze's evidence and its concern relating to the impacts of the Project on the BCTC system, BCTC requested a number of conditions relating to system impacts be imposed on Sea Breeze should the IPL application be approved.

BCTC recommended that Sea Breeze be required to file a transmission interconnection impact and facilities study that shows that the Power Line will not significantly impact the BC Hydro Transmission system, identifies outstanding concerns or issues arising from the study, and proposes mitigative measures for approval. BCTC also called for the filing of the interconnection agreement between Sea Breeze and BCTC.

BCTC further recommended that Sea Breeze be required to file a copy of the Operating Agreement that it enters into for the operation of the Power Line, since, due to the potential interrelationship of the operator with the BCTC system, filing of a copy of the Operating Agreement would be beneficial.

4.6.3 Response of Sea Breeze

Concerning BCTC's condition proposals, Sea Breeze suggested that the types of conditions proposed by BCTC were already addressed in the BCTC OATT.

Views of the Board

Determining the effects of the proposed IPL on other provinces and transfer capabilities between transmission systems is an important consideration in the Board's examination of the application. However, the Board notes that no evidence was placed on the record to show an adverse impact on other transmission systems. In addition, Sea Breeze has committed to providing the WECC study, which would model the impact the IPL would have on the existing neighbouring transmission systems and reveal any adverse impacts that would require mitigation should the Project be implemented. The Board takes notice of the fact that BCTC is a member of WECC.

In the Board's view, Sea Breeze must meet or exceed the performance and reliability standards that would be set out by the WECC Phase 2 Report. The Board would therefore condition the Certificate to require Sea Breeze to file the WECC report with the Board prior to the commencement of construction. The WECC report should show whether the Power Line would significantly impact existing transmission systems. The condition also requires that outstanding concerns be identified and that approval be obtained from the Board for any further mitigation that could be required (condition 18).

The Board further notes WECC's path rating procedures with respect to obtaining an Acceptable rating, and Sea Breeze's intention for the JdFC line to be operated within the WECC Accepted Rating and Operating Transfer Capability limits. Further, a CNE and a CNO would be required from BCTC prior to the IPL being placed into operation.

Given all of these safeguards and checks to ensure the mitigation of any potential adverse impacts the IPL might have on the interconnecting or neighbouring systems if it is approved, the Board is of the view that it is unnecessary for Sea Breeze to also file with the Board the Transmission Interconnection Impact Study and Facilities Studies, and the related filings, as requested by BCTC. The Board would expect that all impacts, including those on BCTC's system, would be considered in the WECC report, or as Sea Breeze indicated, in BCTC's OATT.

The Board notes that the operator of the Power Line has not been identified to date. The Board would condition the Certificate to require Sea Breeze to demonstrate that the operator is qualified to operate and maintain the Power Line in accordance with the standards and procedures set out in the Operations and Maintenance manual (condition 32). In addition, Sea Breeze would retain the responsibility for ensuring that whoever operates the IPL complies with the conditions set out in the Certificate and any other commitments Sea Breeze has made during this proceeding (conditions 6 and 8). Accordingly, the Board has not been persuaded that BCTC's additional condition with respect to filing an operating agreement is necessary.

Given the evidence set out above and the conditions the Board would impose, the Board is of the view that adverse effects of the IPL, if any, on the existing transmission systems could be sufficiently mitigated, and as a result, the operation of the IPL would not adversely impact the existing transmission systems.

Chapter 5

Routing and Land Matters

5.1 IPL Route

5.1.1 Terrestrial Route

5.1.1.1 Position of Sea Breeze

Sea Breeze stated that it selected its route for the JdFC Project, of which the IPL forms a part, by first assessing interconnection alternatives and then focusing on geographic options between its chosen interconnection points. The Port Angeles substation, in Washington State, U.S., was chosen as the southern end point for the JdFC Project.

Further, Sea Breeze submitted that it considered three options for the Canadian end point of the JdFC Project, and the northernmost end point for the IPL: the Horsey Substation, located near downtown Victoria; the Esquimalt Substation, near the eastern edge of Esquimalt; and the Pike Substation, located near Pike Lake, at the northern edge of View Royal. The Pike Substation site was selected due to its existing connections with several transmission lines and its sufficient size for constructing an HVDC Light® converter station.

With respect to the landfall site, Sea Breeze noted that it conducted a multi-disciplinary evaluation and had discussions with stakeholders, such as local municipalities, to select its route for connecting the Pike and Port Angeles Substations. Early priority was given to determining the most suitable landfall site to allow for subsequent identification and assessment of marine and terrestrial route alternatives. Five landfall sites within reasonable proximity to the Pike Substation were considered: Victoria Harbour, Esquimalt Harbour, Albert Head, William Head, and Fleming Beach. Sea Breeze determined that Fleming Beach was the preferred landfall location based on favourable marine conditions, relative proximity to the Pike Substation, and the use of HDD as the method for cable installation.

With respect to the terrestrial route selection of the IPL, Sea Breeze completed a multi-disciplinary analysis of constraints and stakeholder feedback. Sea Breeze identified three general land routing options, each consisting of several potential route segments, between the Pike Substation and the Fleming Beach landfall:

- Route 1: the central option is approximately 12 km long, and generally follows the existing BC Hydro transmission corridor between Francis Park and Freeman King Park, through the Highland Golf Course Development and an RV Park, and along the Old Island Highway, Craigflower Road, and Lampson Street (see figure 2 in Chapter 1 of these Reasons). This is the preferred Route.

- Route 2: the western option follows Highland Road. Route 2 was not preferred due to concerns raised about the potential for disruption to View Royal residents along the Highland Road segment.
- Route 3: the eastern option follows Prospect Lake Road. Route 3 was not preferred mainly because of the greater distance required.

The southern half of all three terrestrial Routes considered by Sea Breeze follow the same path, via the Old Island Highway, Craigflower Road, and Lampson Street to the Fleming Beach landfall site.

Sea Breeze identified Route 1 as its preferred route. Over 7 km of its length passes over existing municipal RoWs used for public road allowances. Sea Breeze stated that using existing RoWs and municipal roads provides cost savings, generally favourable conditions for cable installation and operation and reduces environmental impacts compared with installing across undeveloped land or establishing new utility corridors.

Due to the extent of development in the area of the IPL, Sea Breeze applied for a narrow IPL corridor. Sea Breeze stated that the width of most of this corridor is defined by the boundaries on existing property plans, such as municipal road allowances, over which Route 1 passes. In other places, Sea Breeze sought to utilize existing developed corridors, such as gravel roads, to define the width of the proposed terrestrial corridor.

Subsequent to its initial application, Sea Breeze proposed a potential alternative 1.25 km-long segment to a portion of Route 1. The alternative segment follows part of a railway corridor instead of the Old Island Highway (see figures 1 and 2 in Chapter 1). Sea Breeze submitted this alternative because it would lessen the amount of construction activity otherwise affecting the Old Island Highway. Sea Breeze stated that it had positive discussions with View Royal, Rail America and the Island Corridor Foundation about the potential use of this alternative. Sea Breeze further noted that the installation of the IPL in this alternative segment will assist View Royal in developing a recreational bike trail alongside the corridor.

Sea Breeze submitted that sufficient information is before the Board for the Board to approve both the original Route 1 corridor and a Route 1 corridor incorporating the alternative segment. Sea Breeze would prefer flexibility in order to make a final route selection decision at a later stage in the regulatory process.

5.1.1.2 Position of Parties

Residents

Some Esquimalt and View Royal residents raised concerns associated with the southern portion of all considered Routes. These concerns included disruptions to traffic, electro-magnetic fields (EMFs), noise and blasting. These concerns are further discussed in the ESR and in Chapter 7 of these Reasons.

Response of Sea Breeze

In justifying using this southern portion, Sea Breeze stated, among other things, that preliminary consideration was given to other potential courses for the southern half of the land Routes, but these were not deemed viable for detailed study due to First Nations' opposition. In addition, the Lampson Street corridor is the most direct path to the landfall site.

Goodwill Investments Ltd.

Route 1 generally follows the existing BC Hydro overhead transmission line where, for approximately 1.16 km, it crosses two parcels of privately-owned land. Goodwill Investments Ltd. (Goodwill) owns these two parcels of land and is the only private landowner along Route 1. Goodwill submitted that it uses one parcel of land for the Highland Golf Course development (under construction) and the other parcel of land for an RV park.

Goodwill objected to Route 1, stating that the negative public perception of health risks from the IPL would adversely affect its land-based businesses. In its view, one "for profit" business should not be allowed to take away another property owner's rights merely to reduce their construction costs and increase their profitability. Goodwill indicated that Route 2, on the other hand, is entirely on public land and existing RoWs, implying that Route 2 would be more appropriate for the IPL.

Goodwill also contended that Sea Breeze was ineffective in its information exchange and dialogue with Goodwill regarding IPL routing and related impacts. Goodwill stated that it was initially advised by Sea Breeze that the IPL would pass through a small portion of its golf course development, including the main entrance road underneath the sewer pipes as well as underneath the cart path. Later, Goodwill discovered that the IPL was proposed to go all the way through the golf course development as well as through the middle of the RV park. Understanding that the IPL would produce heat, Goodwill was also concerned with the IPL passing under the golf course fairway, which could result in different colouration of the grass. In addition, Goodwill wondered about the impact of the IPL on its water wells and the computer-driven irrigation system to be used for its golf course development. Goodwill's suggested changes to the draft conditions with respect to the water wells, as well as its other environmental and socio-economic concerns, are discussed in greater detail in the ESR and in Chapter 7 of these Reasons.

Should the IPL be approved, Goodwill indicated it would cooperate with Sea Breeze to ensure that the IPL follows a logical route through its properties.

Response of Sea Breeze

In response to Goodwill's concerns with respect to the location of the IPL on Goodwill's properties, Sea Breeze proposed an IPL corridor in this area that would encompasses the whole of the two Goodwill properties crossed by Route 1. Sea Breeze stated that widening the corridor over these two properties would provide Sea Breeze and Goodwill with greater flexibility when identifying a specific IPL alignment that is acceptable to both parties.

Sea Breeze also indicated that it is prepared to work with Goodwill to improve dialogue between the two parties and in addressing IPL routing and design matters over Goodwill's properties.

Municipalities

The Capital Regional District (CRD), the Town of View Royal, and Esquimalt identified concerns that pertain, for the most part, to detailed IPL alignment and design matters within their public road allowances, rather than general route selection. Concerns included potential impacts to public utility infrastructure, future restrictions on infrastructure alignments, disturbance to residents, disruption of traffic and impacts to road surface integrity. These concerns were more fully explored by Esquimalt during the proceeding.

As discussed in Chapters 4 and 7 of these Reasons and in the ESR, Esquimalt expects to be able to address these concerns with Sea Breeze at a subsequent stage of Project development, that is, during the detailed design phase. As mentioned in Chapter 4, Sea Breeze also committed to consult with the appropriate municipal authorities with respect to these concerns.

View Royal supported the use of the alternative segment of Route 1, subject to certain provisions relating to the construction and installation of the IPL in this area. Sea Breeze had proposed the alternative as a result of consultation with View Royal and others, and the alternative was a change View Royal had wanted.

5.1.2 Marine Route

5.1.2.1 Position of Sea Breeze

Sea Breeze stated that multiple route alternatives for the marine portion of the IPL were not considered for detailed study given the preliminary evaluations carried out by consultants. The single marine route under consideration (see figure 1 in Chapter 1 of these Reasons) was determined based on the optimal Fleming Beach landfall location and constraints in the marine environment, such as ecosystem characteristics, existing infrastructure, and marine protected areas. Sea Breeze submitted that it carried out detailed marine biology, ecology and geophysical studies to determine the engineering and environmental constraints for preliminary design. Based on this information, the HDD exit point was located and a suitable marine corridor was delineated, within which detailed investigation and testing would be undertaken to determine the final IPL alignment. Sea Breeze is seeking a proposed marine IPL corridor that is 300 m wide.

5.1.2.2 Position of Parties

No parties to the proceeding raised issues with respect to the appropriateness of the general route or the width of the corridor for the marine portion of the IPL.

Commercial fishers in the area did have environmental and socio-economic concerns about the effect of the marine portion of the IPL on the fish stock, and their livelihoods. The Department of Fisheries and Oceans, Environment Canada and Transport Canada also raised concerns of an environmental nature, including concerns related to the IPL's impact on fish habitat, water quality, waterways and navigation, as well as concerns related to EMFs and the HDD at Fleming Beach. These environmental and socio-economic concerns are discussed in Chapter 7 of these Reasons and the ESR.

5.1.3 Converter Station Location

5.1.3.1 Position of Sea Breeze

Sea Breeze has applied to site its converter station near the Pike Substation on BC Hydro's lands (see figure 2 in Chapter 1 of these Reasons). Sea Breeze stated that locating its proposed 1.5 hectare (ha) converter station site immediately next to the Pike Substation allows converted AC power to access required substation facilities without the need for additional connecting facilities. Sea Breeze noted that the Pike Substation is situated on an approximately 30 ha parcel of land owned by BC Hydro, of which a large portion is not used for existing facilities and is available for future use and development.

Sea Breeze indicated that it had investigated locating its converter station on lands outside the BC Hydro property. These options were not preferred because the lands are private individual holdings, their existing and future uses are likely to remain inconsistent with that of a converter station, and additional overhead AC transmission lines would be required to connect the converter station with the AC substation.

In addition, Sea Breeze stated that its feasibility and environmental studies indicate that a converter station located on the BC Hydro lands is appropriate to interconnect to the substation given the transmission infrastructure, the load of Vancouver Island, the size of the site and the impact of the proposed converter station. Sea Breeze has filed its routing information, consultation, environmental and other analyses based on the use of the BC Hydro location. Accordingly, Sea Breeze submitted that it is only seeking approval to site the converter station on the 30 ha BC Hydro-owned lands surrounding the Pike Substation. If the IPL is approved, Sea Breeze could undertake further studies within this area to determine the optimal site of the converter station.

Sea Breeze stated that it intends to continue discussions and negotiations with BC Hydro with respect to the siting of the converter station. In other projects, utilities have been offered a number of mitigation efforts that would accommodate their plans plus the projects' plans, and Sea Breeze is of the view that these mitigation efforts should be explored more fully for this Project.

If an alternative converter station site eventually becomes the preferred site, Sea Breeze indicated that it will seek the appropriate relief under the NEB Act.

5.1.3.2 Position of Parties

BC Hydro expressed concerns to Sea Breeze regarding the location of the proposed converter station on its 30 ha property surrounding the Pike Substation, indicating that all of its unused land holdings are potentially required for future substation expansion. Sea Breeze's follow-up discussions with BC Hydro have not resulted in any further resolution of issues regarding the compatibility of its proposed converter station with BC Hydro's future expansion plans, and BC Hydro has stated in correspondence to Sea Breeze that the lands cannot be used for the proposed converter station.

BC Hydro argued that the Board should approve a general route that expressly leaves open the precise location of the converter station (i.e., does not restrict the location to the BC Hydro lands). This would allow for appropriate consultations with all interested parties to determine the converter station location at a later stage in the regulatory process.

Views of the Board

IPL Terrestrial Route

With respect to the terrestrial portion of the IPL route, the Board considers the routing put forward by Sea Breeze to be appropriate. By using existing utility corridors and developed areas where appropriate, Sea Breeze has identified a route (Route 1) that would minimize the overall length of the terrestrial portion of the IPL; limit, to the extent possible, adverse impacts to the land, landowners, other residents, and people requiring access to the area for work or recreation; and potentially capitalize on synergies with other intended development.

The Board recognizes that there are private landowners, such as Goodwill, who could be affected more than other landowners in the area of the IPL. Should the IPL be approved, the Board is of the view that Sea Breeze's proposal to widen the Route 1 corridor over the Goodwill properties would allow maximum flexibility in siting the IPL, which could potentially address some of the routing concerns raised by Goodwill. The Board also notes Sea Breeze's desire to improve its dialogue with Goodwill, and Goodwill's indication that, if the IPL is approved, it would cooperate with Sea Breeze to determine a logical path for the IPL.

The Board also is satisfied that the narrow width of the proposed terrestrial corridor, except where it is widened to provide more flexibility in addressing detailed routing and design matters with Goodwill, is appropriate for the developed nature of the lands through which Route 1 passes. Given Sea Breeze's intention to situate the IPL within already existing RoWs, transmission corridors and road allowances, the width of the corridor should not create a significant impediment to the siting of the IPL during the detailed design phase of the Project, if approved.

The Board notes Sea Breeze's preference for flexibility at this stage of the proceedings with respect to part of the routing for the terrestrial portion of the IPL. Specifically, Sea Breeze is seeking approval of two corridors (i.e., the original Route 1 and the Route 1 using the alternative segment), so that it can make a decision at a later stage in the regulatory process regarding which of the two corridors would form the final route for the IPL.

It is the Board's view that sufficient information has been provided to consider both Route 1 corridors, and that, should the IPL be approved, it

is appropriate that both options remain available at this time. This view is based on the understanding that Sea Breeze must subsequently select one of these corridors prior to filing its plans, profiles and books of reference with the Board. Until the final route corridor is selected, the Board would expect that Sea Breeze would consider both corridors (to the extent that such consideration is applicable to both corridors) when filing any follow-up reports or fulfilling any conditions that would be imposed in any Certificate that may be issued.

IPL Marine Route

The Board notes the evidence with respect to the optimality of the Fleming Beach landfall location, constraints in the marine environment, and the studies undertaken by Sea Breeze. The Board is of the view that both the IPL marine route and the width of the marine corridor, within which the IPL would be situated if a Certificate is issued, are appropriate. The Board also notes that no parties raised a concern with the general marine route of the IPL.

The Board's views with respect to the environmental and socio-economic concerns raised by other parties, and their suggested conditions based on those concerns, are contained within the ESR and Chapter 7 of these Reasons.

Converter Station Location

Although BC Hydro has requested that the Board expressly leave open the location of the converter station, the Board is of the view that there is insufficient evidence on the record with respect to any alternative sites for the converter station to allow the Board to approve an open-ended location. For example, unlike the alternative terrestrial corridor proposed by Sea Breeze, the record does not contain the environmental, consultation, engineering and other analyses for any other location for the converter station.

In addition, Sea Breeze has confirmed that it is only seeking approval for the converter station location on the BC Hydro lands.

Based on these considerations and on the evidence provided to the Board that the area is sufficiently large to provide for flexibility in addressing specific siting matters with BC Hydro, it is the Board's view that the proposed converter station area applied for by Sea Breeze is appropriate.

If a location outside the BC Hydro property is eventually determined by Sea Breeze to be the optimal converter station site, Sea Breeze shall seek the appropriate relief under the NEB Act at that time.

5.2 Land Requirements

5.2.1 Position of Sea Breeze

The terrestrial portion of the proposed IPL crosses four municipal districts in the Greater Victoria area: the Town of View Royal, the District of Highlands, the District of Saanich, and Esquimalt. Sea Breeze indicated that approximately 87 percent of Route 1 passes over municipal, regional district, or Crown-owned lands (most of which is municipal road allowances), and otherwise generally follows existing transportation, access, and linear utility corridors. The remaining 13 percent passes over lands owned by Goodwill and BC Hydro, and in the case of the alternative segment, the Island Corridor Foundation (a charitable foundation representing the interests of local regional districts and First Nations).

Sea Breeze stated that a 3 m-wide permanent RoW would be required for the terrestrial portion of the IPL, which is typical for underground utilities, given the nature of the facilities and construction methods. In addition to the permanent RoW, an approximately 3 m-wide temporary working space (TWS), located immediately adjacent to the permanent RoW along most of Route 1, would be required during construction. The actual size of the TWS could vary depending on trench depth, land use, availability of temporary stockpile space for excavated material, and the cable installation equipment required. Accordingly, the typical total construction workspace width, including the 3 m-wide permanent RoW, would be 8 m on wide asphalt surfaces and 6 m on narrow asphalt surfaces, utility access roads, or semi-disturbed lands. Sea Breeze stated that additional TWS would also be required at stream and railway crossings, and where excavators and tandem trucks are utilized. Sea Breeze further stated that the Fleming Beach landfall HDD site, located on Esquimalt-owned land in the boat launch parking lot, would require a 20 m-wide construction workspace along 30 m of the IPL route.

Sea Breeze indicated that the proposed converter station and all related construction activities would require 1.5 ha (100m x 150m) of BC Hydro's Pike Substation land. Sea Breeze would also require a 10 m-wide construction working space on BC Hydro's property, including a 6 m-wide permanent RoW, for a 220 m-long access road extension to the proposed converter station site, under which the IPL would be placed.

Sea Breeze stated that no permanent lands other than the IPL RoW and converter station site are required for the Project following construction. Access agreements with private property owners and temporary working easements would only need to be negotiated in the event that localized, short-term access is required for IPL repairs.

Sea Breeze advised that all marine lands for the IPL within the proposed 300 m-wide marine corridor are owned by the provincial Crown and are administered by the BC Integrated Land Management Bureau (ILMB). Sea Breeze intends to initially acquire a 100 m-wide linear tenure over the seabed, within which it would place the IPL. Sea Breeze stated that this width is necessary to provide lateral flexibility in the event that minor realignment of the IPL is required during installation. Once installed, Sea Breeze intends to survey the IPL location and acquire a 50 m-wide statutory RoW. The exact alignment of the RoW would depend on localized topographic and geologic features, as well as locations of existing infrastructure on the seabed.

5.2.2 Position of Parties

Esquimalt raised concerns about the location and extent of the land required at the Fleming Beach landfall site for use in the HDD operations, and the impact on parking and seasonal recreational events at Fleming Beach. It also raised a concern about construction impeding access to private residences and businesses. In its view, a more detailed plan outlining alternative access, alternative parking and other mitigation measures must be provided. Nevertheless, Esquimalt indicated that the concerns it expressed would be considered and mitigated during the detailed alignment phase of the Project.

No other parties expressly addressed the amount of land Sea Breeze submitted as its land requirements, i.e., permanent RoW or TWS, for the IPL, although Goodwill initially understood that it was a 1 m easement being sought through their properties.

Views of the Board

The Board has considered the potential impacts of construction of the proposed IPL on affected landowners, including the amount of land required for the RoW, for the converter station site and for other purposes off the RoW.

The Board notes Esquimalt's indication that the concerns it raised would be considered and mitigated during the detailed design phase of the Project, if approved. The Board further notes Sea Breeze's commitment, mentioned previously, to consult with the municipalities during the detailed design phase of the Project. Given this, the Board finds that Sea Breeze's anticipated land requirements are reasonable.

5.3 Land Acquisition

5.3.1 Position of Sea Breeze

Sea Breeze stated that it would obtain all necessary property interests by way of license of occupation and statutory RoW issued by the ILMB for all marine lands, fee simple or long-term lease for converter station lands, and permanent easement or TWS interests for terrestrial IPL installation and operation. Sea Breeze noted that it expects to negotiate all necessary RoW, TWS, permit, and tenure agreements following a favourable decision on its application.

Sea Breeze filed sample forms of notice and land acquisition agreements to demonstrate compliance with s. 86 and s. 87 of the NEB Act. Sea Breeze noted that it has undertaken communications with private landowners, such as Goodwill, regarding land access and acquisition. These landowners would be provided with notice pursuant to s. 87 of the NEB Act prior to entering into any land acquisition agreement.

5.3.2 Position of Parties

Both Goodwill and BC Hydro emphasized that they did not agree to Sea Breeze's proposed use or acquisition of their lands.

BC Hydro's letter to Sea Breeze, referenced above, indicated that no portion of the Pike substation site would be sold or alienated. BC Hydro also elicited evidence from Sea Breeze that it had not sought Governor in Council leave to take or use BC Hydro lands, pursuant to section 77 of the NEB Act. BC Hydro noted in argument that it was willing to work with Sea Breeze in relation to investigating the potential placement of the converter station on the BC Hydro lands and was hopeful that a negotiated arrangement may be reached in relation to the use of a portion of those lands for the converter station. However, BC Hydro's first obligation is to ensure that the ultimate configuration supports the safety and reliability of the existing system.

Goodwill indicated that it felt it was misleading for Sea Breeze to portray a route going through Goodwill's properties, and present this before the Board, when that route had not been agreed to by Goodwill. Goodwill indicated that it had never agreed to any negotiations, and that its previous meetings with Sea Breeze were for the purpose of gathering information about the Project for review by Goodwill's Board. Goodwill also stated that it does not feel that any location on its properties would be acceptable. However, should the IPL be approved, Goodwill would work with Sea Breeze's engineers to ensure the IPL follows a logical path.

5.3.2.1 Response of Sea Breeze

In response to BC Hydro's position, and as previously mentioned, Sea Breeze indicated that it intends to continue discussions with BC Hydro and feels that mitigation efforts should be explored more fully to accommodate both Sea Breeze and BC Hydro's plans. Sea Breeze was of the view that it would be premature to seek the consent of the Governor in Council, pursuant to section 77 of the NEB Act, to take or use BC Hydro land at the Pike substation, and has not initiated that process.

With respect to Goodwill's comments, Sea Breeze responded that when it met with Goodwill in September 2005, Sea Breeze was very encouraged by the discussions it had with Goodwill concerning typical means of installing the cable. At the time of filing its application, Sea Breeze was of the view that the land acquisition process was moving forward with Goodwill; there had been direct meetings, written mail and email correspondence. At least at the early stage, Sea Breeze had some very productive discussions with Goodwill, though it acknowledged that in the New Year, Goodwill had formed the position that they were not interested in negotiating. Sea Breeze indicated that it has tried to negotiate with Goodwill, and continues to want to try to negotiate. Sea Breeze is interested and hopeful that it can continue discussions with Goodwill and find a resolution and a fair commercial settlement to allow it to proceed with its Project. In argument, Sea Breeze stated that it wanted to improve the relationship with Goodwill and believes that the best way to do this is through dialogue that involves an impartial facilitator. Sea Breeze is prepared to investigate this option further.

Views of the Board

The Board notes Sea Breeze's obligation and its commitment to comply with the NEB Act land acquisition requirements.

Although Sea Breeze may not have reached agreement with landowners with respect to its land acquisition, the requirements for an application for a Certificate for an international power line, as set out in the *National Energy Board Electricity Regulations*, do not require the filing of final land acquisition agreements. The NEB Act does not require that the land acquisition process be completed at the time an application is filed or even before a Certificate is issued. Therefore, in the Board's view, it is not necessary for Sea Breeze to have completed its land acquisition process or to have complied with section 77 of the NEB Act prior to the Board making its determination on the application.

The Board notes BC Hydro and Sea Breeze's willingness to continue negotiations. The Board also notes Sea Breeze's commitment to continue its discussions with Goodwill and to try to improve its relationship with Goodwill. Should the IPL be approved, the Board encourages the parties to continue to work together to try to find a mutually satisfactory resolution.

The Board has considered Sea Breeze's land acquisition approach and finds it appropriate.

Chapter 6

Consultation

6.1 Position of Sea Breeze

Sea Breeze stated that it undertook the following consultation activities with respect to the Project:

- phone calls, letters, emails and faxes with background information and maps to introduce the proposed Project to stakeholders, and local governments;
- emails, letters and phone calls to property owners, local residents, and stakeholders to inform them of the open houses;
- meetings with interest groups at the request of both the proponent and the groups;
- newspaper advertisements in local papers to notify the general public and others of the open houses;
- news releases, and other media contact (e.g., interviews) to provide information about the IPL;
- five public open houses and meetings to provide technical information about the IPL and seek both oral and written (comment form) feedback;
- display materials for use at open houses and meetings with stakeholders, First Nations and government agencies;
- web site devoted specifically to the Project; and
- handouts and fact sheets and related information on the Project.

Sea Breeze stated that it contacted the Esquimalt Nation and Songhees First Nation in December 2004, once it was clear that the Power Line would be sited within the Greater Victoria Region and within their traditional territories.

On 20 May 2005, Sea Breeze and the Esquimalt Nation signed a Protocol Agreement that set out a process for information sharing and to establish a basis for beginning discussions on community benefits. Terms of a similar protocol agreement are under discussion with the Songhees First Nation.

Sea Breeze submitted that, to identify preliminary route options, it first met with municipal engineers. Sea Breeze then began to plan public events and contact additional local organizations, such as local chambers of commerce and recreational groups. Property owners and residents along the proposed route were sent flyers prior to the first community event in July 2005, which briefly introduced the Project and invited the recipients to the open house.

Sea Breeze submitted that prior to filing its application it conducted public outreach activities that were concentrated in the three districts through which the proposed route would run (Esquimalt, View Royal and Highlands). Introductory community events took the form of Open Houses, commencing in July 2005 and running through November 2005. In response to concerns expressed by some Esquimalt residents that they had been unable to attend the July open house, Sea Breeze arranged a follow-up meeting in Esquimalt in November 2005.

In July and November 2005, Sea Breeze staff went door-to-door in the Fleming Beach area to deliver letters, Project Overview handouts, and notices of upcoming public meetings to local residents. In addition, Sea Breeze staff undertook door-to-door consultation in November 2005, along the proposed route, in the Francis Park area in the Town of View Royal.

Sea Breeze submitted that it created a list of stakeholders who wished to remain informed about Project developments and sent Project updates to these stakeholders throughout the process. The purpose of the updates was to maintain communication with local residents and remind them to contact Sea Breeze with any questions or concerns.

Sea Breeze continued its consultation with the public throughout the course of this proceeding and committed to continuing consultations in the future.

6.2 Position of Parties

Both First Nations provided information to Sea Breeze about current and historical traditional use in the area, which was included in the application. The Esquimalt and Songhees First Nations and the Sencot'en Alliance[4] applied for Intervenor Status in the NEB Hearing process, expressing their interest in all projects undertaken in their traditional territories and any impact on their traditional use of the land. However, no First Nation actively participated in the Hearing nor did any express any concerns about Project impacts.

Several residents submitted letters of comment expressing concerns that the consultation undertaken by Sea Breeze was inadequate.

One letter of comment stated that the writers were alarmed at the number of residents in their neighborhood, adjacent to Lampson Street in Esquimalt, who were unaware of the IPL proposal. They submitted that the process for notification of the public was quite inadequate and that they believe there would be much more public opposition to the IPL proposal had there been a more thorough process for public notification.

They also stated that the notification process relied heavily on notices placed in some newspapers and that newspaper notices cannot be relied upon to reach the public in today's world because the readership of newspapers had decreased in recent years.

The same writers submitted that those living within three blocks on either side of the proposed route, and frequent users of areas on or near the Route should have been directly informed of the

4 The Sencot'en Alliance is made up of the four First Nations, Tsawout, Tsartlip, Pauquachin and Semiahmoo whose traditional territory includes parts of the proposed route.

proposal by delivery to their mailboxes and by placement of notice boards along the Route, particularly in parks, schools and golf courses.

Another letter of comment stated that everyone to whom the writers had spoken had great concern with regard to the rapidity with which the IPL application seemed to be rushed through all the necessary hurdles for approval. They claimed that many Esquimalt businesses and residents only heard the details of it on October 26, 2005. Although Sea Breeze held the first public consultation in July 2005, many people had not heard about it, thought it did not apply to them or felt that it was held at an inconvenient time. Further, they submitted that many people do not get the newspapers where many of the advertisements for public consultation were placed. As a result, the writers believed that concerned residents were left with very little time to research, analyze or study the current situation or Sea Breeze.

Some visitors to the Esquimalt Open House in July 2005 noted that they did not feel they received adequate notification, and some local residents contacted Sea Breeze after the event to advise that they could not attend the event but wished to attend any future events in the area.

As previously mentioned, Goodwill, a private landowner whose properties are crossed by Route 1, expressed concern that the consultation undertaken with them by Sea Breeze was inadequate. Sea Breeze's consultation with Goodwill is discussed further in Chapter 5 of these Reasons.

Views of the Board

The Board is of the view that the consultation methodology and timing undertaken by Sea Breeze prior to filing the application were consistent with the requirements of the NEB's October 2005 draft *Electricity Filing Manual*. The NEB Filing Manual requires the proponent to design a consultation program that is appropriate for the nature of the project. In this case, Sea Breeze used various methods of notification depending on the extent to which stakeholders (e.g., First Nations, government agencies, residents, businesses, recreational land users, etc.) would be affected by the Project.

After filing its application, Sea Breeze continued its consultation with the public throughout the course of this Hearing. Sea Breeze also committed to continuing consultations in the future.

In particular, the Board notes that Sea Breeze held an additional public meeting in Esquimalt to accommodate residents who had been unable to attend the July 2005 open house. Sea Breeze also created a list of stakeholders who wished to remain informed about Project developments and sent Project updates to these stakeholders throughout the process.

Therefore, the Board concludes that the consultation activities conducted by Sea Breeze prior to the filing of the application and during the Hearing process were appropriate.

Should a Certificate be issued, the Board would expect Sea Breeze to continue consulting with potentially affected stakeholders prior to, during and after construction of the IPL, and over the lifetime of the Project to the extent necessary.

Chapter 7

Environmental and Socio-economic Matters

7.1 CEAA Environmental Screening Report

As mentioned in Chapter 1 of these Reasons, in order for the Board to satisfy the requirements of the CEA Act and address its responsibilities pursuant to section 58.16 of the NEB Act relating to environmental and socio-economic matters, the Board prepared an ESR on Sea Breeze's proposed Project.

The ESR describes the proposed Project, the setting for the Project, the methodology for the assessment, the potential environmental and socio-economic effects, mitigation measures proposed by Sea Breeze, and evaluates the likely significance of any adverse environmental and socio-economic effects.

All known environmental and socio-economic effects covered by the CEA Act are assessed in the ESR. More detailed analysis of adverse environmental effects was undertaken for complex matters and for matters of public concern. For this Project, detailed analyses in the ESR are provided for the following issues:

- injury/loss of mature trees, the analysis of which has contributed to condition 12 on the Certificate;
- re-suspending contaminated sediment within the ocean, the analysis of which has led to condition 27;
- change in magnetic field (MF), temperature and voltage leaks in marine environment, the analysis of which has contributed to condition 12;
- change in MF and EMF levels in terrestrial environment (potential affect on people);
- change in noise level in proximity to the HDD site (potential effect on people), the analysis of which has led to conditions 11 and 26;
- destruction or damage to previously unidentified heritage resources, the analysis of which has led to conditions 23, 24 and 29;
- deleterious impact on water wells, the analysis of which has led to conditions 25 and 30;
- noise impact on local residents during operation of the converter station, the analysis of which has led to conditions 20 and 36; and
- inability of fishermen to grapple for lines and traps, the analysis of which has led to condition 19 and contributed to condition 12.

In addition, the ESR considers submissions made during the course of the Hearing and includes recommendations for conditions should a Certificate be issued. Submissions made by intervenors for additional environmental Certificate conditions or amendments to draft

conditions are specifically addressed in the ESR. This includes submissions from commercial fishers concerning the burial of the cable, pre-installation study of stock distribution, post-installation monitoring of sediment movement, a communications system for reporting snagged fishing gear and for compensation for lost gear, acknowledgement that it is imprudent for fishers to fish in areas where the cable is exposed and indemnity against legal action in the event that snagged gear damages the cable. Other submissions were made by Goodwill, concerning effects on water wells; Esquimalt, concerning EMFs; and the Town of View Royal, concerning noise and EMFs.

Following the oral portion of the Hearing, a draft ESR was made available to other RAs and to the public for comment. The final ESR incorporates those comments as appropriate and provides the views of the Board and the Board's determination under the CEA Act.

Views of the Board

Having considered the ESR in accordance with Hearing Order EH-1-2006 and the CEA Act, the Board is of the view that, subject to implementation of the proposed mitigation measures and the conditions recommended in the ESR, the Project is not likely to cause any significant adverse environmental effects, including those socio-economic effects assessed in the ESR.

7.2 Infrastructure and Services

Infrastructure matters related to traffic management, and water quality and quantity, are addressed in the ESR.

In addition to those socio-economic matters assessed in the ESR, the Board also considered additional socio-economic matters relating to infrastructure and services under the NEB Act.

Matters related to the engineering and design aspects of potential interactions between the IPL and existing infrastructure are discussed in Chapter 4 of these Reasons.

7.2.1 Position of Sea Breeze

Sea Breeze submitted that it discussed the IPL in detail with municipal engineering staff of Esquimalt and the Town of View Royal. Matters discussed during those meetings included the technical aspects of construction of the Project, as well as the types of existing utilities along the proposed route. Sea Breeze stated that the standards and criteria for design and construction of the IPL will be discussed in conjunction with detailed alignment of the IPL and negotiations for an Access Agreement for the use of the municipal RoWs.

7.2.2 Position of Parties

According to Esquimalt, concerns with respect to interactions between the IPL and existing utilities will be considered and mitigated during the establishment of the detailed alignment.

It stated that with the detailed alignment:

- the infrastructure depths will be known so that cable depth needed to provide worker safety can be determined;
- the number and location of infrastructure crossings will be known so integrity issues can be mitigated; and
- restrictions for future utility alignments will be considered while selecting the exact route.

The Town of View Royal and Esquimalt both submitted that they have an interest in the effects that the IPL may have on the roadways beneath which the IPL would be located. In particular, the Town of View Royal suggested that impacts on surface pavement be added to the draft condition relating to infrastructure.

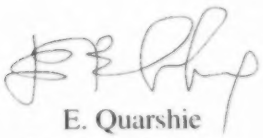
Views of the Board

The Board is of the view that potential interactions between the IPL and existing infrastructure could be sufficiently addressed during the detailed alignment stage, as suggested by Sea Breeze and Esquimalt. Furthermore, the Board would condition any Certificate to require Sea Breeze to identify all infrastructure crossings and confirm it has agreements or permits in place for those crossings (condition 21). The Board notes that, in the context of that condition, "infrastructure" is intended to have a broad interpretation and includes roadways as well as utilities and any other affected facilities.

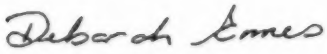
Chapter 8

Disposition

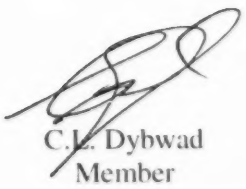
The foregoing chapters constitute our Decision and Reasons for Decision in respect of the application heard before the Board in the EH-1-2006 proceeding. The Board is satisfied from the evidence that the proposed international power line is and will be required by the present and future public convenience and necessity. The Board approves Sea Breeze's application made pursuant to section 58.16 and 58.23 of the NEB Act for a new ± 150 kV HVDC merchant IPL and will, subject to approval of the Governor in Council, issue a certificate of public convenience and necessity subject to the conditions set out in Appendix II.



E. Quarshie
Presiding Member



D.W. Emes
Member



C.L. Dybwad
Member

Calgary, Alberta
September 2006

Appendix I

List of Issues

The Hearing Order identified the following list of issues for discussion in the EH-1-2006 proceeding:

1. The need for the proposed facilities.
2. The appropriateness of the design of the proposed facilities.
3. The safety of the design and operation of the proposed facilities.
4. The potential environmental and socio-economic effects of the proposed facilities, including those factors outlined in subsection 16(1) of the *Canadian Environmental Assessment Act.*
5. The appropriateness of the route selection and land requirements.
6. The appropriate terms and conditions to be included in any approval the Board may issue.

Appendix II

Certificate Conditions

General Conditions

1. The international power line and its associated facilities to be constructed and operated pursuant to this Certificate (the Power Line) shall be owned and operated by Sea Breeze Victoria Converter Corporation (Sea Breeze).

2. Sea Breeze shall not sell, convey, lease or otherwise transfer the Power Line to any person, in whole or in part, without leave of the Board.

3. The Power Line shall be operated at its nominal design voltage level of +/-150 kV.

4. Sea Breeze shall cause the Power Line to be designed, manufactured, located, constructed, installed and operated in accordance with those specifications, drawings, and other information or undertakings set forth in its application, at the EH-1-2006 proceeding and in its related submissions.

5. Sea Breeze shall design, construct and operate the Power Line to comply with current Canadian Electrical Code, Canadian Standards Association and other relevant standards applicable to the design, construction and operation of power lines.

6. Sea Breeze shall implement or cause to be implemented all of the policies, practices, mitigative measures, recommendations and procedures for the protection of the environment and the promotion of safety referred to in its application, or as otherwise adduced in its evidence in the EH-1-2006 proceeding, or as agreed to in its related submissions.

7. Prior to scheduling or providing transmission service to any person intending or proposing to export electricity from Canada over the Power Line, Sea Breeze shall confirm that the person has obtained all requisite export permits or licenses authorizing all such exportation.

8. Sea Breeze shall comply with all of the conditions contained in this Certificate unless the Board otherwise directs.

Prior to Any Construction in General

9. **Compliance Verification**

   Sea Breeze shall file with the Board at least one hundred and thirty (130) days prior to the planned start of construction, a table listing all commitments, undertakings and conditions, and the deadlines associated with each.

10. Horizontal Directional Drilling (HDD) Hazard Assessment and Contingency Plans

Sea Breeze shall file with the Board for approval, at least one hundred and twenty (120) days prior to the planned start of construction, an HDD hazard assessment identifying:

(a) the potential hazards that may be encountered during the Fleming Beach HDD operations; and

(b) the contingency plans to be implemented if any of the identified hazards are encountered during the Fleming Beach HDD operations.

11. HDD Site Noise Assessment

Sea Breeze shall file with the Board for approval, at least one hundred and twenty (120) days prior to the planned start of construction, a noise assessment report for the HDD at Fleming Beach that includes:

(a) existing ambient noise levels at the most affected residences;

(b) predicted noise level at the most affected residences caused by the HDD without mitigation;

(c) predicted noise level at the most affected residence with implementation of the different, available HDD noise mitigation measures;

(d) noise contour map(s) showing the potentially affected residences at various noise levels; and

(e) a description of the potential health impacts of exposure to predicted noise levels over various exposure periods.

12. Pre-Construction Environmental Reports

Sea Breeze shall file with the Board, at least ninety (90) days prior to the planned start of construction, the following reports or plans:

(a) weed survey and applicable weed control program;

(b) tree protection plan;

(c) watercourse crossing plan, with site-specific mitigation strategies and construction techniques;

(d) riparian re-vegetation plan; and

(e) marine monitoring plan.

13. Pre-Construction Rare Plant Survey

Sea Breeze shall file with the Board for approval, at least ninety (90) days prior to the planned start of construction, a Rare Plant Survey that includes:

(a) the results of the Survey, including all mitigation strategies to protect any identified Species at Risk; and

(b) evidence of consultation with Environment Canada regarding satisfaction with the proposed mitigation.

Construction shall not commence until Sea Breeze has received approval of its Rare Plant Survey from the Board.

14. Potentially Acid Generating (PAG) Rock

Sea Breeze shall file with the Board for approval, at least ninety (90) days prior to the planned start of construction, a project-specific, potentially acid generating rock (PAG) Plan that includes:

(a) Sea Breeze's mitigation goals and measurable objectives regarding the PAG Plan;

(b) the methods and procedures to be used to achieve the mitigation goals;

(c) the criteria to determine if the mitigation goals have been met; and

(d) the frequency of monitoring activities at area(s) of concern along the right of way and in temporary workspaces.

Construction shall not commence until Sea Breeze has received approval of its PAG Plan from the Board.

15. Environmental Protection Plan (EPP)

Sea Breeze shall file with the Board for approval, at least sixty (60) days prior to the planned start of construction, an updated, project-specific Environmental Protection Plan (EPP). This EPP shall be a comprehensive compilation of all environmental protection procedures, mitigation measures, and monitoring commitments, as set out in Sea Breeze's application for the Power Line, subsequent filings, evidence in the EH-1-2006 proceeding, or as otherwise agreed to in its related submissions. The EPP shall describe the criteria for the implementation of all procedures and measures, and shall confirm Sea Breeze's intention to implement all of its commitments.

The EPP shall include, but is not limited to, the following elements:

(a) environmental procedures including site-specific plans, criteria for implementation of these procedures, mitigation measures and monitoring applicable to all project phases and activities;

(b) orientation program detailing the manner and frequency of communicating the commitments within the EPP to field staff;

(c) a reclamation plan which includes a description of the condition to which Sea Breeze intends to reclaim and maintain the right of way once the construction has been completed, and a description of measurable goals for reclamation; and

(d) evidence of consultations, with relevant regulatory authorities, landowners or other stakeholders, that either confirms satisfaction with the proposed mitigations or describes any remaining concerns and explains why satisfaction can not be achieved.

Construction shall not commence until Sea Breeze has received approval of its EPP from the Board.

16. Canadian Authorizations

Sea Breeze shall file with the Board, at least sixty (60) days prior to the planned start of construction, confirmation that proposed design and installation standards have received all necessary approvals from the appropriate regulatory bodies having jurisdiction and the British Columbia Safety Authority.

17. United States (U.S.) Approvals

Sea Breeze shall file with the Board, at least sixty (60) days prior to the planned start of construction, confirmation that all necessary U.S. federal and state permits and regulatory approvals regarding electrical standards and installation practices have been received for the U.S. portion of the Juan de Fuca Power Line Project.

18. Western Electricity Coordinating Council (WECC) Report

Sea Breeze shall file with the Board, at least sixty (60) days prior to the planned start of construction:

(a) the WECC report that shows whether the Power Line will significantly impact the power line transfer capabilities between Alberta and British Columbia and any other inter-provincial or international import/export transmission systems;

(b) any outstanding concerns or issues arising from the WECC report, including any identified necessary upgrades or modifications to the existing systems; and

(c) for approval, any further mitigation Sea Breeze would undertake to address these concerns or issues, should (b) apply.

19. Unrecoverable (Fishing) Equipment Mitigation Plan

Sea Breeze shall file with the Board for approval, at least sixty (60) days prior to the planned start of construction, an Unrecoverable (Fishing) Equipment Mitigation Plan that includes:

(a) the frequency and methodology to be used to share information with the fishing industry about known sections of unburied or shallow buried cable;

(b) the frequency and methodology to be used to share information with the fishing industry about best management practices for gear setting and recovery in the cable corridor;

(c) the frequency and methodology to be used to share information with the fishing industry about standard protocols for lost fishing gear recovery within the cable corridor including criteria for abandoning recovery effort due to vessel and crew safety as well as other concerns; and

(d) a description of consultation that was undertaken with members of the fishing industry in the development of the Plan.

20. Converter Station Noise

Sea Breeze shall file with the Board, at least sixty (60) days prior to the planned start of construction, a noise assessment for the converter station. The assessment shall include:

(a) the existing day-time and night-time ambient noise levels without the converter station operating;

(b) a discussion of the Permissible Sound Levels proposed (AEUB Guide 38 or other industry standard) for the station;

(c) any further mitigation that Sea Breeze would undertake to address (b); and

(d) a discussion of the consultation undertaken with local residents and the municipality about this issue, including any concerns and how those concerns have been, or will be, addressed.

21. Infrastructure

Sea Breeze shall file with the Board, at least sixty (60) days prior to the planned start of construction, the identity of all infrastructure facilities to be crossed by the Power Line, and confirmation that all the agreements or crossing permits for those facilities to be crossed have been acquired.

22. Construction Safety

Sea Breeze shall file with the Board, at least thirty (30) days prior to the planned start of construction:

(a) the safety manual to be followed for the construction of the Power Line; and

(b) an outline of the safety training program to be implemented for construction of the Power Line.

23. Archaeological Impact Assessment (AIA)

Sea Breeze shall file with the Board, at least thirty (30) days prior to the planned start of construction:

(a) the AIA of the transmission route, substations and HDD platform; and

(b) copies of any correspondence from, or a summary of any discussions with, the Provincial authorities responsible for Archaeological and Heritage Resources regarding the acceptability of Sea Breeze's AIA and proposed mitigation measures for the transmission route, substations and HDD platform.

24. Archaeological Reports

Sea Breeze shall file with the Board, at least fourteen (14) days prior to the planned start of construction:

(a) a copy of the archaeologist's preliminary assessment of the areas of moderate to high archaeological potential along the final terrestrial route to ascertain the precise footprint of the Power Line and identify necessary measures should new artifacts or remains be discovered; and

(b) a copy of the marine archaeologist's report regarding the locations of submarine archaeological features, including any recommendations or requests for further investigation or route modification, based on a review of the videography and other survey data previously taken.

25. Water Wells

Sea Breeze shall file with the Board and owners of the wells, at least fourteen (14) days prior to the planned start of construction, a report on the quality and quantity of water in water wells within 200m of the Power Line footprint. The report shall provide the results of the pre-construction water well testing, as well as the methodology and a discussion of the results.

Prior to Specific Components of Construction

26. HDD Site Noise Control Plan

(1) Sea Breeze shall file for approval at least ninety (90) days prior to the start of HDD at Fleming Beach, a noise control plan containing information on day-time and potential night-time HDD operations, including but not limited to:

(a) existing ambient noise levels at the most affected residences;

(b) predicted noise level at the most affected residences caused by the HDD without mitigation;

(c) proposed HDD noise mitigation measures;

(d) predicted noise level at the most affected residence with implementation of the mitigation measures;

(e) noise contour map(s) showing the potentially affected residences at various noise levels;

(f) a noise monitoring program including locations, methodology and schedule;

(g) criteria that will be used to determine when a shut down of the HDD will be required due to noise;

(h) criteria that will be used to determine when to notify the Township of Esquimalt and the Board of any noise spikes;

(i) confirmation that residents potentially affected by HDD noise have received contact information for Sea Breeze in the event they have concerns about the HDD noise; and

(j) a program for addressing noise complaints.

(2) Should Sea Breeze apply for a variance from the Township of Esquimalt Noise Bylaw, it shall concurrently file a copy of its application with the Board. If not included within its application to the Township of Esquimalt, Sea Breeze shall also file with the Board:

(a) the expected night-time noise levels; and

(b) a description of consultation that has taken place with the Township of Esquimalt and with potentially affected residents, including any concerns and how Sea Breeze will address those concerns.

27. Marine Sediments

Sea Breeze shall file with the Board, at least thirty (30) days prior to the planned start of marine construction, a report that:

(a) identifies the selected marine corridor on a map or diagram; and

(b) provides the results of the sampling program including, but not limited to, the contamination verification sampling near Macaulay Point.

28. Blasting Program

Sea Breeze shall file with the Board, at least seven (7) days prior to filing its Plans, Profiles and Books of Reference, its Blasting Program which:

(a) demonstrates compliance with Provincial Regulations and local Bylaws;

(b) documents public consultation and notification, and mitigation of concerns; and

(c) describes how it will be effectively implemented to protect Sea Breeze employees, the public and nearby infrastructure and buildings.

During Construction

29. Submarine Anomaly

Sea Breeze shall file with the Board, at least fourteen (14) days prior to the planned start of the HDD at Fleming Beach, either:

(a) a report describing the anomaly near the HDD exit point (identified in the Archaeological Overview Assessment [AOA]) if the site is ground-proofed; or

(b) the method(s) undertaken to ensure that anchors and chains set around the HDD exit point do not impact this area if the site is not ground-proofed.

30. Water Wells

Within three (3) days after blasting occurs at any single blasting location, Sea Breeze shall conduct tests on the quantity and quality of water in water wells that are within 200m of that single blasting location. Sea Breeze shall file a report with the Board and the owners of those wells, within thirty (30) days of all tests being completed, discussing the outcome of these tests and potential mitigation measures, if any.

Prior to Operation

31. Operations and Maintenance Manual

Sea Breeze shall file with the Board, at least sixty (60) days prior to the in-service date of the Power Line, an Operations and Maintenance Manual for the Power Line. The manual shall require Sea Breeze to conduct documented audits of its records and inspections of the Power Line's facilities and right of way to confirm Sea Breeze's conformance to the requirements of the manual. The manual shall also include a schedule or procedure for its periodic review and update, as appropriate, to ensure it remains current with regulatory requirements and accepted industry practice. The manual, program and procedures shall be made available to the Board for periodic review and audit. This manual should include, but not be limited to:

(a) ongoing physical facility maintenance and monitoring requirements and plans for the Power Line;

(b) a public awareness program that keeps the public apprised and aware of ongoing hazards associated with the Power Line;

(c) contact numbers for the public to report issues and concerns; and

(d) training requirements for personnel implementing the manual.

32. Power Line Operator

Sea Breeze shall file with the Board, at least sixty (60) days prior to the in-service date of the Power Line, the name of the Operator of the Power Line and documentation to demonstrate that the Operator is qualified to operate and maintain the Power Line in accordance with the standards and procedures set out in the Operations and Maintenance Manual (condition 31). In addition, Sea Breeze shall notify the Board in writing should it terminate, or otherwise modify arrangements or commitments made pursuant to this condition.

33. Health, Safety and Environment Policy and Emergency Response

Sea Breeze shall file with the Board, at least fourteen (14) days prior to the in-service date of the Power Line, the following documents that will apply to the Power Line:

(a) the Health, Safety and Environment Policy; and

(b) the Emergency Response Plan.

Post-Construction and During Operations

34. Condition Compliance by a Company Officer

Sea Breeze shall file with the Board, within thirty (30) days after the in-service date of the Power Line, a confirmation by an officer of the company that the approved facilities were completed and constructed in compliance with all applicable conditions in this Certificate. If compliance with any of these conditions cannot be confirmed, the officer of the company shall file with the Board details as to why compliance cannot be confirmed.

35. As-Built Drawings

Sea Breeze shall file with the Board, within sixty (60) days after the in-service date of the Power Line, as-built drawings identifying the location of all facilities including, but not limited to, the converter station, cable and submarine protection mats.

36. Noise Assessment at Converter Station

Sea Breeze shall file with the Board, within ninety (90) days after the in-service date of the Power Line, a post-construction noise assessment to assess the effectiveness of any mitigative measures implemented at the converter station as a result of condition 20.

37. Geoduck Recovery

On or before the 31 of January of the first, second and fifth year following the in-service date of the Power Line, Sea Breeze shall file with the Board a post-construction Geoduck Recovery Monitoring Report that:

(a) identifies on a map or diagram the follow-up location(s) for the geoduck recovery monitoring;

(b) provides a discussion of the scientific methodology applied for the recovery program;

(c) provides the criteria to be used to verify the accuracy of the environmental assessment predictions;

(d) assesses the effectiveness of the mitigation applied before, during and after construction;

(e) identifies the current status of any issues identified, and whether those issues are resolved or unresolved; and

(f) provides proposed measures and a schedule by which Sea Breeze will address any unresolved concerns.

38. Certificate Expiration

Unless the Board otherwise directs prior to 31 August 2009, this Certificate shall expire on 31 August 2009 unless construction in respect of the Power Line has commenced by that date.